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**Title word cross-reference**

2 [VSS+13, Wal18]. 256<sup>4</sup> [IKY+10]. 3 [AKW19, ARR99, BGM15, CSGM17, FIMU19, GGS01, HSLK11, KC18, PR95, SSCF19, THL88]. <sup>2</sup> [AMC+18]. <sup>3</sup> [KPST18].  $\alpha$  [TKSK88].  $d = 2$  [BRT+92].  $H$  [YIYD19].  $\mathbf{CH} + \mathbf{H}_2 \rightleftharpoons \mathbf{CH}_3^* \rightleftharpoons \mathbf{CH}_2 + \mathbf{H}$  [ASW91].  $\mathbf{CuO}_2$  [SSSW91].  $ILU$  [SZ11].  $k$  [TNLP13].  $K_2$  [CBW95].  $LU$  [BLRR01, DD89, DD91, IGDQO19, YZC+15].  $M \times N$  [BYCB05, DP05, JLO05].  $N$  [HJ96, SWW94, DAB+12, FT19, RTRG+07].  $\star$  [NC18].

**-Body** [HJ96, SWW94, RTRG+07, DAB+12, FT19].

**-D** [SSCF19, ARR99, GGS01, PR95, THL88].

**-matrix** [YIYD19].

**0th** [RAGW93].

**100** [IHMM87]. **100k** [INY+14]. **10P** [DD89]. **164** [LT88]. **1917-1991** [Mar91]. **1A** [HXW+13]. **1s** [McN89].

**2** [CL95, CC95, CLM+16, DD89, DD91, GCL93, HGMW12, LT90, LYL+16, Mor89a]. **200/VF** [DD89]. **2000** [CLBS17]. **2003** [OL05]. **2004** [DT06]. **205** [ABAS87, McN89].

**3** [BG00, CM97, JLO05]. **3-D** [BG00, CM97]. **3.0** [BRM03]. **3090** [DD89]. **3090-200** [DD89]. **3090-200/VF** [DD89]. **31G\*** [PUR94]. **3800** [WOG95].

**416** [THL88]. **450** [MAB+13].

**5** [HRM89]. **5/SE** [KJH96].

**6** [Pla09, PUR94]. **6-31G\*** [PUR94]. **600J** [DEKV92]. **623** [LYL+16]. **64-core** [VEMR17].

**80** [DD91]. **860** [HGD91, KR95]. **87545** [Bus87].

**90** [DL97].

**A&M** [Nas92]. **abstraction** [MFOAGE18]. **accelerate** [GLZS14]. **accelerated** [AWWG19, CSGM17, GDKWS15, NOM+19, RDG12, RWM17, SFLC18, SE12, TRS13]. **Accelerating** [CLG13, JDD18, KPST18, LDLD19, MPD+12, VOL+14, CAE+13, MP18, YFS+14]. **Acceleration** [AGC+19, ATL+15, CKE08, SCKW19, CLBS17, KDO16, LQJG16, MGS+15, SDF+17, SSCF19]. **accelerator** [RMV+19]. **accelerators** [HDL+15, MCU+13, MFOAGE18, NOM+19]. **accelerators/InfiniBand** [NOM+19]. **Access** [Bri10, KR11, NTKP06, WHL03, DKMT18, DCN17, HGMW12, Wal18]. **Accessing** [HLP+03]. **Accurate** [LR09, LRO10, TMWS91, VFD04, WSD+14]. **Acknowledgments** [Ano02c, Ano02d]. **Acoustic** [GKN+96, MBF+11]. **Across** [KS05, SB19]. **ACS** [Mar88a]. **Action** [DBA+09, Num04]. **Active** [Her91]. **Activity** [CY08]. **ACTS** [DT06]. **Ad** [BG02, CHZ02, IBC+10, TNBG07]. **Ad-Hoc** [IBC+10]. **Ada** [Kok88]. **adaptation** [DCLS19]. **Adapted** [PMS+04]. **Adapteva** [VEMR17]. **Adapting** [DE03]. **Adaptive** [AH93, CKPD99, CW05, EDSV06, FSC+11, HT04b, HRW19, JSSZ09, Kal09b, RV15, SR05, TRS13, VR00, Wri12, dRADS+18a, KBY+19, LST15, LPB+16, FSC+11]. **Adaptive-CoMPI** [FSC+11]. **adaptively** [Sta19]. **Additive** [PR95]. **Address** [MHW15, SBG10]. **Addressing** [SWA+14]. **adjoint** [YWL+14]. **adjoint-based** [YWL+14]. **Administration** [SDA+01]. **Adsorption** [CH94]. **Advanced** [Ano87a, MA15, TC10, Don89]. **Advances** [KKDV03, KKD05, LK10, NPT+06, BC14]. **Advisor** [GVF+18]. **Aerodynamics** [YM91]. **Aerospace** [MAB07]. **against** [SFLC18]. **Agenda** [Ano87b]. **agent** [WDH+15]. **Agents** [QWIC02]. **Aggregation** [ZRC+06, AMC+18, WVVL+16]. **agricultural** [SH93]. **Aided** [MM90]. **aircraft** [GDS17]. **AIX** [Ano01a]. **Alamos** [BBB+91b, Bus87]. **Albany** [DWT+19]. **Albedo** [Tho90]. **Algebra** [CDQS04, CDP+94, Don02a, Don02b, Ede93, GJMS88, JO92, KJH96, MA15, PB19, Poz97, ATD17, FTB13, LRLG19, MBvdG13]. **Algorithm** [AH93, AEPR92, ARR99, BCCL09, Bai88, BMT89, CBW95, CBV97, DIB00, GJMS88, GCD97, HA91, HT04b, IJ93, JL89, KVV+90, KC92a, KC92b, LP10, LRBS89, LJC+10, Mar87a, Mor89a, SCB+95, Sta19, SD87, TRS+10, UF89, WCE95, ABH+18, AHB+16, BGM15, DSH+16,

GHL15, KWEF18, MJGL13, NMAE13, PH19, RPdB<sup>+</sup>19, UZM<sup>+</sup>14, YZC<sup>+</sup>15, YB12]. **Algorithm-based** [Sta19, YZC<sup>+</sup>15]. **algorithmic** [HHSM19]. **Algorithms** [AM00, BG02, Cha88, CDT05, CAK<sup>+</sup>07, Fro91, GD09, GKMT00, HdV18, KLJ87, MS09, MPS15, NK89, NZ93, PMS<sup>+</sup>04, RRV06, SC04a, Sha88, Wad99, CGW19, CdVL<sup>+</sup>18, CSC19, ESW<sup>+</sup>12, FTB13, LRLG19, NC18, dAVCM<sup>+</sup>19, McR87]. **aligned** [RWM17]. **aligner** [IMB<sup>+</sup>19]. **Alinea** [MA15]. **All-Gather** [TRS<sup>+</sup>10]. **all-reduce** [CGW19]. **All-to-All** [BJ92]. **Alliant** [DD91]. **Allocation** [AAF<sup>+</sup>01, FBBC03, WPBB01, YB07, Jea13, MRD<sup>+</sup>15, SPNB14]. **Alpha** [KHP<sup>+</sup>04]. **Altera** [RGB<sup>+</sup>18]. **Alternative** [SWHP05]. **Amazon** [Pap11]. **AMBLE** [HBSP08]. **Amdahl** [ABD<sup>+</sup>18, HE01]. **amines** [PUR94]. **ammonium** [PUR94]. **Amplitude** [BGK<sup>+</sup>90]. **AMR** [RV15, SZC12]. **analogs** [PUR94]. **Analysis** [ACD07, BBC<sup>+</sup>00, Del93, DH96, DF08, EGMP93, Eyr06, GHM<sup>+</sup>10, GNB11, HVWS09, HVSW09, HLW00, IMW<sup>+</sup>13, IHMM87, Ish91, LM03, LWL05, MB87, Mic09, RS03, SSQ08, SCB<sup>+</sup>95, SE92, SC09, SGFC09, SBG10, SBBS06, THDC09, WBFB04, YRA<sup>+</sup>02, ZRC<sup>+</sup>06, dRADS<sup>+</sup>18b, BBDH14, BCLP17, DWT<sup>+</sup>19, EAG<sup>+</sup>19, FIMU19, IMH<sup>+</sup>11, IMH<sup>+</sup>12, JKD<sup>+</sup>11, JDAD19, LH18, LRLG19, MPD<sup>+</sup>12, MP18, MCR<sup>+</sup>17, MJD16, MRD<sup>+</sup>15, PF16, STP<sup>+</sup>13, SDJ17, TKA<sup>+</sup>17, TDM<sup>+</sup>17, LS90]. **Analytic** [MA89, THDS19]. **Analytical** [FFR<sup>+</sup>10]. **analytics** [AGHR19]. **Analyze** [KKCB98]. **Analyzers** [Ano01a]. **Analyzing** [BRU05, NC18, UZM<sup>+</sup>14, WPBB01]. **Anatomy** [FKT01, KWEF18, YFH<sup>+</sup>96]. **Andabyss** [Spr06]. **Angara** [SDI<sup>+</sup>19]. **Animal** [UB95]. **animated** [LSS93]. **Animation** [SS89]. **anisotropic** [DCLS19]. **Annex** [Ano02f, Ano02h, Ano02g, Ano02i, Ano02j, Ano02e]. **Announcements** [Ano92a, Ano92b, Ano92c, Ano92d]. **Aperture** [MPG93, ZCZ<sup>+</sup>13, SVBP13]. **API** [BH00]. **Appendix** [Ano01a, Ano02f]. **Appendixes** [Ano01a]. **AppLeS** [SBWS99]. **applicability** [WKLW19]. **Application** [AS00, Bar09, BKRSR09, BCC<sup>+</sup>01, BWB<sup>+</sup>10, BPK<sup>+</sup>07, BB02, CWG09, DW97, DFMD94, FTB13, FSC<sup>+</sup>11, GHM<sup>+</sup>10, GHZ10, Kal09a, KKCB98, KS09a, MSHPV18, Mic09, MS95, NKR90, OCC<sup>+</sup>08, PPK09, PHC<sup>+</sup>10, SC09, TM99, TKA<sup>+</sup>17, AKW19, CMS<sup>+</sup>11, DEL<sup>+</sup>12, GVF<sup>+</sup>18, MCR<sup>+</sup>17, Ozs16, SHK<sup>+</sup>18]. **Application-based** [MSHPV18]. **application-level** [DEL<sup>+</sup>12]. **Application-tailored** [FTB13]. **Applications** [AGR<sup>+</sup>03, Ano91b, Ano92g, Ano92e, Ano92f, Ano93a, Ano94a, Ano95b, Ano95a, Ano96a, Ano97b, Ano97c, Ano97a, BGG05, BP01, BDP01, BV11, BM12, BM13, BBH<sup>+</sup>06, BRU05, BJ92, BJK07, Bus87, CBL10, Cot04, Cza03, Dar99, Dee10, DH96, DE03, FGC<sup>+</sup>05, Fra05, GKP97, GMLP08, GG14, HT04a, HLW00, HRM89, JMC05, KBA00, Key09, KUE<sup>+</sup>00, LDGR03, Lee03, LM03, kLCCW07, MKG90, MYCR06, Mar87a, MAB07, ME14, MYC92, Mor89b, NFK98, NPT<sup>+</sup>06, RBMF87, SC04b, SSNM92, SVN09, SBG10, SKC10, TXD<sup>+</sup>07, TLG98, TAR<sup>+</sup>08, Wal03, WWA<sup>+</sup>11, WBFB04, ZOF90, dSSB<sup>+</sup>08, ASHH16, Ano94c, dRADS<sup>+</sup>18b, ABD<sup>+</sup>18, AGHR19, BH17, BRGR11, BPR18, BSW<sup>+</sup>14, BEK<sup>+</sup>18, BGB<sup>+</sup>18, BG11, CDRV15, CRS<sup>+</sup>19, CBD<sup>+</sup>17, DAB<sup>+</sup>12, DMQS12, ECG<sup>+</sup>13, EJD<sup>+</sup>19, GCSK13, HGWN14, IMB<sup>+</sup>19, JRT16, KPR17, LRG<sup>+</sup>16, LWT<sup>+</sup>11, MGB12, MFB<sup>+</sup>19]. **applications** [MCR<sup>+</sup>17, MDH<sup>+</sup>18, MCU<sup>+</sup>13, PH91, PNFC16, RV15, SDJ17, SKZ<sup>+</sup>18, SIC<sup>+</sup>19, SLG95, SMZ<sup>+</sup>18, TNLP13, THC<sup>+</sup>11, UZM<sup>+</sup>14, WDW<sup>+</sup>12, WD19, Ano98b, Ano99, Ano91a, Ano98a, Ano00, Ano01b]. **Applications-**

[Ano91b, Ano92e, Ano92f, Ano93a].  
**Applications-Information** [Ano92g].  
**Applied** [vLRA<sup>+</sup>03, BE17, IKMS<sup>+</sup>19].  
**Applying** [Dem90, LDGR03, MBHF15].  
**Approach** [BYCB05, DZ07, FBW<sup>+</sup>87, KS09b, LDB<sup>+</sup>06, NTKP06, Sha88, uITH07, Spr06, DCM<sup>+</sup>17, FTB13, GS18, HLC<sup>+</sup>19, HGWN14, IGDQO19, KBY<sup>+</sup>19, MGB12, MP18, MJD16, PNFC16]. **Approaches** [SWHP05, MJGL13]. **Approximate** [Cho01, HFV<sup>+</sup>12]. **Approximation** [DGJ09]. **Aqueous** [PRT90]. **Architectural** [Gro03, TXD<sup>+</sup>07]. **Architecture** [BAA<sup>+</sup>06, Hua03, HWP03, Ish91, KBA00, KFM<sup>+</sup>10, SC04b, MMDA19].  
**Architectures** [BFL99, GD09, HD05, HdV18, HLW00, HSLK11, MS02, RW03, RS03, SSQ08, AKC<sup>+</sup>19, BSK14, HFV<sup>+</sup>12, IMH<sup>+</sup>11, IMH<sup>+</sup>12, JO92, KILL13, LNSMMA15, STP<sup>+</sup>13, Udd17, VOL<sup>+</sup>14, YFS<sup>+</sup>14]. **Area** [DFP<sup>+</sup>96, MYCR06, MAJJS03, NBB<sup>+</sup>96, Rad18]. **Argonne** [Don89]. **ARION** [HLP<sup>+</sup>03]. **Arising** [Ma00]. **Arithmetic** [BSBF89, Gro03, LH19]. **ARMCI** [NTKP06]. **Army** [Aus92]. **Array** [BBDR95, CYT<sup>+</sup>02, JO92]. **Arrays** [HC08, NPT<sup>+</sup>06, CBD<sup>+</sup>17, DFT<sup>+</sup>15, Wal18].  
**Arrival** [Wit92]. **Artificial** [Ano87d, YIME19]. **ASCII** [PK04]. **Aspects** [RW03, ZOF90]. **Aspen** [SVBP13]. **Assessing** [ACM88, MWC<sup>+</sup>05, TDG<sup>+</sup>19]. **Assessment** [ZOF90]. **Assist** [BB02]. **association** [GDKWS15]. **astronomy** [CLG13, VFJ<sup>+</sup>15]. **astrophysical** [FT19].  
**Asynchronous** [TNBG07, BBDH14, PH91, RWM17].  
**Asynchrony** [WWA<sup>+</sup>11]. **Atmosphere** [DEE<sup>+</sup>12, HAF<sup>+</sup>96, MS05, MW12, TD08, AGC<sup>+</sup>19, EAG<sup>+</sup>19]. **Atmosphere-Ocean** [HAF<sup>+</sup>96]. **Atmospheric** [ARR99, DFS<sup>+</sup>05, GGS01, WD05, AWWG19, MKM<sup>+</sup>19]. **atom** [TSH<sup>+</sup>19]. **Atomic** [HB90, IHMM87, LRT07, SYF96].  
**Atomistic** [NKiN<sup>+</sup>08, GSK<sup>+</sup>15].  
**Attributes** [Del93]. **Audio** [TC10]. **August** [DT13]. **Auto** [THC<sup>+</sup>11, CH13, TRS13].  
**Auto-tuning** [THC<sup>+</sup>11, CH13, TRS13].  
**Automata** [AKP08, MHS11, RES87, GDS17].  
**Automatic** [BHK<sup>+</sup>06, CBL10, CDCV06, Cza03, KMPJ08, MJ04, Yel04, CH13].  
**Automaton** [BCZM07]. **Automobile** [HTSK90]. **Autonomous** [SKB01].  
**Autotuning** [OV13, BHK<sup>+</sup>13, CBM13].  
**Availability** [Pra01]. **Aware** [KCC<sup>+</sup>06, TCW06, YBA<sup>+</sup>03, CZR<sup>+</sup>11, GJMV18, HTD<sup>+</sup>14, HLW<sup>+</sup>16, KPR17, MRD<sup>+</sup>15, SS10]. **Awareness** [HBSP08].  
**Axisymmetric** [SG91].  
**B** [Ano02h, Ano01a, Ano02g]. **B.E.** [BPBL11]. **Babel** [EKD<sup>+</sup>12]. **Back** [BPBL11, BIC<sup>+</sup>10, BBD<sup>+</sup>17]. **Balance** [BG09]. **Balanced** [BFNV07]. **Balancing** [GS05, GLGLB<sup>+</sup>11, ZBMK11]. **Band** [Tho90]. **Banded** [Ano02k]. **bandwidth** [CIWI17]. **Based** [AM00, CY08, CLP<sup>+</sup>99, DCL<sup>+</sup>08, FSC<sup>+</sup>11, GGS01, GRC08, Gro03, Gus04, Hua03, Key09, MWM<sup>+</sup>08, Nak99, Num04, PGTS10, PPK09, PBAL09, QH08, SG07, TCW06, TC10, VDB04, WPBB01, ATL<sup>+</sup>15, BGM15, BE17, BEW16, BAP<sup>+</sup>12, CBM13, CHT<sup>+</sup>19, CZR<sup>+</sup>11, CCBL18, DSH<sup>+</sup>16, DAB<sup>+</sup>12, EDB19, FTB13, GSA<sup>+</sup>19, GDS17, HTD<sup>+</sup>14, HDL<sup>+</sup>15, HLP<sup>+</sup>03, JKD<sup>+</sup>11, JDD18, JKBW18, LM03, MGB12, MSHPV18, MJGL13, NC18, PSV<sup>+</sup>16, STP<sup>+</sup>13, Sta19, SDI<sup>+</sup>19, SPNB14, TR17, TPG<sup>+</sup>18, WKLW19, WZHG17, YZC<sup>+</sup>15, YWL<sup>+</sup>14, ZZG<sup>+</sup>14].  
**Basic** [Gir02, JO92, KJH96, Don02a, Don02b].  
**basis** [EKF<sup>+</sup>19, LDLD19]. **Batched** [HDL<sup>+</sup>15]. **Bay** [WLV<sup>+</sup>96]. **Bayesian** [KPST18]. **Beambeam3D** [SSQ08].  
**Beamforming** [CYT<sup>+</sup>02]. **Bearing** [FFNP97]. **Behavior** [AK93, DCN17].

**behaviour** [CHT<sup>+</sup>19]. **BenchFriend** [CS14]. **Benchmark** [DL09, HC10, DHL16, NMI<sup>+</sup>19, PSV<sup>+</sup>16, PF16]. **Benchmarking** [BRT<sup>+</sup>92, HBC<sup>+</sup>08]. **Benchmarks** [BCK<sup>+</sup>89, Gus04, McN89, MSK92, SGFC09, WGI90, WOG95, WG07, BWB<sup>+</sup>10, CS14, BBB<sup>+</sup>91a]. **benefit** [WLFH16]. **Benefits** [ACM88]. **Beowulf** [SS99]. **Bergen** [Gaf88]. **Best** [BPBL11, Lee03]. **better** [DCD<sup>+</sup>13, GGO16, SZ11, TGP19]. **between** [SKS<sup>+</sup>13]. **Beyond** [Hab90, Mar89b, SBF90, SPHW18, INY<sup>+</sup>14]. **Big** [AMB<sup>+</sup>18, YIN<sup>+</sup>11, CCBL18]. **Biggest** [Ste09a]. **Bill** [Bus87]. **billions** [HLH<sup>+</sup>19]. **Binary** [DIB00, LK01]. **Biofluid** [RKKC90]. **Bioinformatic** [GHM<sup>+</sup>10]. **Bioinformatics** [TXD<sup>+</sup>07, MCR<sup>+</sup>17]. **Biological** [FFR<sup>+</sup>10, WW92]. **Biology** [SSNM92, VRR18]. **Biomedical** [KHK<sup>+</sup>09]. **Biomembranes** [SABK94]. **blade** [KBY<sup>+</sup>19]. **blade-resolved** [KBY<sup>+</sup>19]. **Blas** [Ano02k, Ano02b, Ano02a, BG11, DD89, DD91, Ano02h]. **Blast** [Don02a, Don02b]. **Block** [Arn07, BS88, DEKV92, RV15]. **Block-Sorting** [Arn07]. **block-structured** [RV15]. **Blocked** [BELF07]. **Blocks** [HC08]. **Bloom** [LGDH16]. **Blue** [GNB11, KMH<sup>+</sup>14, MAB<sup>+</sup>13, SSU<sup>+</sup>12, YIN<sup>+</sup>11]. **BlueGene** [dSSB<sup>+</sup>08]. **BlueGene/L** [dSSB<sup>+</sup>08]. **Board** [SPTT08]. **BOAST** [VPG<sup>+</sup>18]. **Body** [HJ96, Nak99, RTRG<sup>+</sup>07, SWW94, TMWS91, DAB<sup>+</sup>12, FT19]. **Boltzmann** [SBBS06, CGST19, Mon12, OKTR11, RWM17]. **bond** [THDS19]. **bond-order** [THDS19]. **Bone** [HOPB92]. **Book** [Bus87, Con88, Don87, Mar87a, Mar87b, Mar88a, McR87, Nag89]. **Boundary** [uITH07, SG91]. **Boundary-Value** [uITH07]. **BPEL** [MWM<sup>+</sup>08]. **brick** [LPB<sup>+</sup>16]. **Bridging** [SS99]. **Brink** [Spr06]. **broad** [Rad18]. **broad-area** [Rad18]. **Broadcast** [BJ92, YSP<sup>+</sup>05]. **BSC** [LAV09]. **BSP** [dAVCM<sup>+</sup>19]. **BSP/CGM** [dAVCM<sup>+</sup>19]. **buffer** [LBB17]. **Build** [CD06]. **Builder** [DL97]. **Building** [CDH<sup>+</sup>97b, FD04, LJO05, SKZ<sup>+</sup>18, SW04, Wit92, vLRA<sup>+</sup>03]. **Bulk** [DGP<sup>+</sup>97, MAJJS03, Jon12, WDW<sup>+</sup>12]. **bundle** [WVL<sup>+</sup>16]. **Butterfly** [Kum89]. **Buzbee** [Bus87]. **Byte** [WG07].

**C** [Ano02i, Ano02j, dRADS<sup>+</sup>18b, BLC17, LJC<sup>+</sup>10, Poz97, TDM<sup>+</sup>17]. **C90** [ABF<sup>+</sup>99]. **Cache** [BMWD87, BH06, GHM<sup>+</sup>10, SC04a, Wad99, ABD<sup>+</sup>18, ABG<sup>+</sup>19, CHT<sup>+</sup>19]. **Cache-Coherent** [Wad99]. **Cache-Efficient** [SC04a]. **cache-oblivious** [CHT<sup>+</sup>19]. **cache-partitioned** [ABD<sup>+</sup>18, ABG<sup>+</sup>19]. **caches** [CSC19]. **Caching** [kLCCW07]. **Cactus** [AAF<sup>+</sup>01]. **calcium** [CHW<sup>+</sup>15]. **Calculation** [ACG<sup>+</sup>90, BGK<sup>+</sup>90, TMWS91, HIT<sup>+</sup>14]. **Calculational** [ZOF90]. **Calculations** [CDD<sup>+</sup>90, Gen88, Liu90, TMW<sup>+</sup>99, YCHH90, ZK93, CLM<sup>+</sup>16, HTD<sup>+</sup>14, SDI<sup>+</sup>19, TSKK88]. **Calibrating** [ABH<sup>+</sup>18]. **Call** [DBA<sup>+</sup>09]. **Caltech** [Din91]. **Caltech/JPL** [Din91]. **CAM** [TD08, DEE<sup>+</sup>12, LMT<sup>+</sup>12]. **Campus** [GNTLH97]. **Campus-Wide** [GNTLH97]. **Can** [Pan97, VFJ<sup>+</sup>15]. **Canada** [Num87]. **Cancers** [GKB93]. **Candidate** [MCS<sup>+</sup>06]. **Cane** [YWL<sup>+</sup>14]. **capabilities** [IMS16]. **Capability** [GS09, BBH<sup>+</sup>13, DVW<sup>+</sup>12]. **capable** [RWM17]. **Capacity** [BL99]. **Carcinogens** [HB90]. **cardiac** [BSW<sup>+</sup>14]. **Cards** [Gro03]. **Carlo** [BEH<sup>+</sup>90, CH94, DFT<sup>+</sup>15, FSS13, LM03, LPB<sup>+</sup>16, MWAR<sup>+</sup>87, MB87, MFP<sup>+</sup>17, SABD13, SSSW91, SSR<sup>+</sup>14, VSS<sup>+</sup>13, ZK93]. **Carolina** [LC90]. **Case** [BF01, BDFVP15, CBW95, CDH<sup>+</sup>97b, GLGLB<sup>+</sup>11, GL97, HL10, HE01, HLP<sup>+</sup>03, MT89, PPK<sup>+</sup>04, SG09a, WGI90, WLB92, WW92, BSW<sup>+</sup>14, CGGC<sup>+</sup>16, CMS<sup>+</sup>11, DTL19, IMB<sup>+</sup>19, MBvdG13, MCR<sup>+</sup>17, OF17, TKA<sup>+</sup>17, THC<sup>+</sup>11, YWL<sup>+</sup>14]. **cases**

[CDL<sup>+</sup>19]. **cat** [YIME19]. **cat-scale** [YIME19]. **CBVE** [WLVL<sup>+</sup>96]. **CCDSC** [DT13]. **CCG** [DT11]. **CCSM4** [CVJ12]. **CEBAF** [DZDR95]. **Cell** [EGG05, WET<sup>+</sup>19, BPBL11]. **Cell/B.E.** [BPBL11]. **cells** [RPdB<sup>+</sup>19]. **Cellular** [AKP08, BCZM07, MHS11, GDS17]. **Center** [All88, ISD89, Mer87, RS88, MP95, Aus92, ABB<sup>+</sup>94, BBW90, DGH<sup>+</sup>93, KT94, LC90, Mai87, Mir90, Nas92, Sci92, TR92]. **Centers** [All88, Aus92, BBB<sup>+</sup>91b, Bra91, BBW90, GS09, KT94, Nas92, TR92, Web91]. **Centre** [Gaf88, MHW15]. **Centric** [SR05]. **Century** [BHdR09]. **cerebellum** [YIME19]. **CERFACS** [ISD89]. **CESM1** [CVJ12, CMHB15]. **CFD** [GKMT00, KDL01, LDGR03, WKLW19]. **CFDShip** [BCYS11]. **CFDShip-Iowa** [BCYS11]. **CGM** [CDT05, dAVCM<sup>+</sup>19]. **CGMGRAPH** [CDT05]. **CGMGRAPH/CGMLIB** [CDT05]. **CGMLIB** [CDT05]. **CGNR** [Man97]. **chain** [DSH<sup>+</sup>16]. **Challenge** [BEH<sup>+</sup>90, CBB<sup>+</sup>96, DSD<sup>+</sup>91, GD09, IKY<sup>+</sup>10, Kit90, RAGW93, SGFC09, NMI<sup>+</sup>19, RAB<sup>+</sup>15]. **Challenges** [Cap09, GL09, Her09, KMW<sup>+</sup>13, VFJ<sup>+</sup>15, GR17, WD19]. **change** [ZCZ<sup>+</sup>13]. **Changing** [MMS88]. **Chapel** [CCZ07, CH13, DZ07]. **Characteristics** [McR87, LWT<sup>+</sup>11]. **Characterization** [Kal09a, LPJ98, TMMR10, WDW<sup>+</sup>12, Har11]. **Characterization/Segmentation** [Kal09a]. **Chaste** [BSW<sup>+</sup>14]. **checker** [TDG<sup>+</sup>19]. **Checkpoint** [CY08, SSB<sup>+</sup>05, BRR17, IFA15]. **Checkpoint/Restart** [SSB<sup>+</sup>05]. **checkpoint/verification** [BRR17]. **Checkpointing** [GNB11, SSB<sup>+</sup>05, HLC<sup>+</sup>19, KHS<sup>+</sup>19]. **Chemical** [ARR99, Bro88, DFC90, Koi90, Mar88a, MMS88, TWK87]. **Chemically** [LP10, MYC92]. **ChemIO** [NFK98]. **Chemistry** [ATD<sup>+</sup>88, Bro88, EDS95, Mar88a, NFK98, TMW<sup>+</sup>99]. **Chesapeake** [WLVL<sup>+</sup>96]. **China** [SKC10]. **chip** [KDH18, VEMR17]. **chips** [LTPK17]. **Cholesky** [Jea13]. **Chroma** [JC12]. **Chromodynamics** [Liu90]. **CICE** [CMHB15]. **Circular** [AEPR92]. **Circulation** [KM95, PLS05]. **CLAS** [DZDR95]. **Class** [McN89]. **Classification** [Tho90, WEPB12]. **Client** [kLCCW07]. **Client-Side** [kLCCW07]. **Climate** [CJK<sup>+</sup>05, DJC05, GS05, JLO05, WOS08, WHL03, WDH<sup>+</sup>15, YWL<sup>+</sup>14]. **Climatic** [WBMV90]. **Cloud** [LJC<sup>+</sup>10, BTRZ<sup>+</sup>19, MCR<sup>+</sup>17, TR17, TPG<sup>+</sup>18]. **cloud-based** [TPG<sup>+</sup>18]. **Clouds** [Dee10, DT11, DT17, Tho90, DT19, MGB12, MRD<sup>+</sup>15]. **Club** [BCK<sup>+</sup>89]. **Cluster** [BFNV07, CK01, DMT01, Fra05, GSHL03, JSSZ09, KT99, LWL05, WG07, GDKWS15, MHS11, NOM<sup>+</sup>19, WZHG17, JDD18]. **Clustering** [NRR97, DSH<sup>+</sup>16]. **Clusters** [AWS01, BG09, CDT05, CAK<sup>+</sup>07, CWG09, CDCV06, DT99, DT11, DT17, Gir02, KS05, LDB<sup>+</sup>06, MWC<sup>+</sup>05, PPK<sup>+</sup>04, PC08a, SG09a, Ste01, YB07, CvG11, DTDP14, DT19, EEL15, HLS<sup>+</sup>17, JRT16, JC12, MBC<sup>+</sup>18, Pap11]. **CM** [CC95, KJH96]. **CM-2** [CC95]. **CM-5** [KJH96]. **CM-5/SE** [KJH96]. **CM2** [CH94]. **CMP** [ABG<sup>+</sup>19]. **Co** [ABD<sup>+</sup>18, ABG<sup>+</sup>19, GD09, Mat03, BPR18, Jon12, UCZ<sup>+</sup>15]. **Co-Design** [GD09, UCZ<sup>+</sup>15]. **Co-reservation** [Mat03]. **Co-scheduling** [ABD<sup>+</sup>18, ABG<sup>+</sup>19, Mat03, BPR18, Jon12]. **Coarse** [BGB<sup>+</sup>96, DZRS99]. **Coarse-Grained** [BGB<sup>+</sup>96, DZRS99]. **Coastal** [Cow08]. **Code** [AD89, AJL<sup>+</sup>97, BBA87, BH00, CK01, CEL<sup>+</sup>97, Del93, DZDR95, HL10, HE01, LWL05, MMD98, MS02, MT89, MBF<sup>+</sup>11, MSK92, PPR03, Pla09, YW93, BSH<sup>+</sup>16, DWT<sup>+</sup>19, DAC<sup>+</sup>14, FU12, HIT<sup>+</sup>14, INY<sup>+</sup>14, JKD<sup>+</sup>11, MBvdG13, MGS<sup>+</sup>15, SSR<sup>+</sup>14, TRS13, TGP19, VRB<sup>+</sup>19]. **Codes** [AS00, BGB<sup>+</sup>18, CL95, DL97, IHMM87,

MCW<sup>+</sup>00, Reu92, SWW94]. **coexistence** [CBA<sup>+</sup>18]. **Coherent** [Wad99, PS12]. **Collaboration** [SG09b]. **Collaborative** [DFH<sup>+</sup>96, HBSP08, NBB<sup>+</sup>96]. **Collaboratory** [YFH<sup>+</sup>96]. **Collapse** [Gun00, HTSK90]. **Collection** [DT06]. **Collections** [HLP<sup>+</sup>03]. **Collective** [BMR06, FCLG07, KFM<sup>+</sup>10, LCZ<sup>+</sup>15, TRG05, VFD04, KMH<sup>+</sup>14, SCB14]. **collectives** [DJJ<sup>+</sup>19, WLFH16]. **Collide** [NBB<sup>+</sup>96]. **collision** [VOL<sup>+</sup>14]. **Color** [IMH<sup>+</sup>11, IMH<sup>+</sup>12, Tho90]. **Color/Albedo** [Tho90]. **Columbia** [MAB07, HBC<sup>+</sup>08]. **combatant** [BCYS11]. **combination** [ASHH16]. **Combinatorial** [BG11]. **Combined** [YK04, BLOR18]. **Combining** [Gir02, Mon12, SCB14]. **Coming** [de 89]. **commercial** [MRD<sup>+</sup>15]. **Commercialization** [SG09b]. **Common** [ZM07]. **Communication** [BCG<sup>+</sup>10, BYCB05, BKS<sup>+</sup>07, BBDR95, FIMU19, HC10, INY<sup>+</sup>14, JLO05, LR09, LRO10, LRT07, NTKP06, PLS05, QH08, RW03, SWHP05, TRG05, TGT05, BBH<sup>+</sup>13, CSC19, DGB<sup>+</sup>14, IYK16, NOM<sup>+</sup>19, OGM<sup>+</sup>16, RWM17]. **Communication-overlap** [INY<sup>+</sup>14]. **Communication/Computation** [BBDR95]. **Communications** [Ano87e, BMR06, Bus87, VFD04, SCB14]. **Communicators** [GFD05]. **Community** [DBA<sup>+</sup>09, HBSM03, CJK<sup>+</sup>05, DVW<sup>+</sup>12, DEE<sup>+</sup>12, DJC05, ESW<sup>+</sup>12, HVKW05, JLO05, MS05, MW12, TD08, WD05]. **Comparative** [MOK00]. **Comparing** [BF01]. **Comparison** [BSK14, CAK<sup>+</sup>07, Gen88, HC10, Jon92, KM95, Mat95, SR98, SFLC18]. **Comparisons** [Ma00]. **Compensation** [MSMW07]. **CoMPI** [FSC<sup>+</sup>11]. **Compilation** [BJK07, CW05, PG18]. **Compiler** [CW05]. **Compilers** [Ano01a, YHG<sup>+</sup>07]. **Complete** [LK01]. **completely** [PH19]. **Completion** [CY08]. **Complex** [ASHH16, Dar99, GKB93, GHZ10, PK04, CSGM17, WKLW19]. **complex-entry** [CSGM17]. **Complexity** [BMR06, BGB<sup>+</sup>96, DF08, Spr06, BRGR11]. **Component** [BAA<sup>+</sup>06, DF08, KBA00, KFM<sup>+</sup>10, MGB12, PGTS10, PPR03, SVN09]. **Component-Based** [PGTS10, MGB12]. **Components** [CTD<sup>+</sup>05, WSD<sup>+</sup>14]. **Composing** [HGWN14]. **composite** [NMAE13]. **composites** [LPB<sup>+</sup>16]. **Composition** [Cot04, DLB07]. **Compositional** [AWS01, BBD00, KR94, KR95]. **Compounds** [FWZ91]. **compressible** [HHSM19]. **Compression** [Arn07, DLY<sup>+</sup>98, DF08, FSC<sup>+</sup>11, CGGC<sup>+</sup>16, CCO<sup>+</sup>19, CDL<sup>+</sup>19, IFA15, KV19, Ozs16, TDG<sup>+</sup>19]. **Compressors** [GMWG10, YK07]. **Compromised** [LJC<sup>+</sup>10]. **Compromised-Time-Cost** [LJC<sup>+</sup>10]. **COMPSs** [CCBL18]. **Computation** [BBDR95, CBW95, Chu99, ISD89, GWKN08, Her88, HS93, JP93, Nag89, SSNM92, Ste09a, Ste09b, Tis97, WSCZ05, SVBP13, WEPB12, ABB<sup>+</sup>94, KT94, TR92]. **Computational** [Blo87, CD97, Cha88, CDH<sup>+</sup>97b, DVW<sup>+</sup>12, DFMD94, DGJ09, DT99, DGH<sup>+</sup>93, Duk91, EGMP93, FBW<sup>+</sup>87, Gen88, HBSM03, HOPB92, HL10, JL89, NFK98, Num04, PK04, PBE<sup>+</sup>19, RBMF87, SK90, SG07, SBWS99, SW04, TMW<sup>+</sup>99, VR00, Wit92, WPBB01, YM91, YK07, Ytt97, AFL<sup>+</sup>18, BSW<sup>+</sup>14, CGGC<sup>+</sup>16, CBA<sup>+</sup>18, DTL19, JKBW18, TBA<sup>+</sup>17, VRRL18]. **Computations** [BBR10, Ber92, Duk91, MA15, MCG04, SD87, BCYS11, BCLP17, DKMT18, HDL<sup>+</sup>15]. **compute** [KL13]. **Computer** [BEF<sup>+</sup>95, Bus87, CKE08, Cla91, Don89, GL09, HKK88, HD05, JL89, KT99, MM90, PS87, TWK87, VC89, WBM90, AHB<sup>+</sup>16, BAM<sup>+</sup>16, BE17, HIT<sup>+</sup>14, HLS<sup>+</sup>17, INY<sup>+</sup>14, KMM16, Kum89, MBHF15, PNFC16, TAM<sup>+</sup>16].

**Computer-Aided** [MM90]. **Computers** [Ano87f, BOD<sup>+</sup>91, BBA87, BH99, CDH<sup>+</sup>93, CDP<sup>+</sup>94, EDS95, FG97, FFNP97, GP93, Gun00, IS96, Jon92, Meu88, CGST19].

**Computing** [ATN<sup>+</sup>00, Ano87a, Ano87d, Ano94c, Ano95b, Ano98b, Ano98a, Ano99, Ano00, Ano01b, Aus92, BV11, BM12, BM13, BGI<sup>+</sup>99, BAA<sup>+</sup>06, BRT<sup>+</sup>92, Bus87, CWHP99, DF18, Dar00, Dem90, Don89, DT99, DMT01, DT11, DT17, DCL<sup>+</sup>08, Ede93, EDSV06, EW06, Ewi88, Eyr06, FGC<sup>+</sup>05, FGJ<sup>+</sup>04, Gaf88, GHM<sup>+</sup>10, GMWG10, GNTLH97, GL97, HME90, Her09, JLL04, JSSZ09, Joh01, KDH11, Kep04a, KT99, Kuc04, KHK<sup>+</sup>09, KS05, LS90, LJC<sup>+</sup>10, LD07, MPS15, Mah90, MYCR06, Mar87a, Mat95, ME14, PPK09, PA11, Rao02, RAGW93, Sab91, Sal87, SKB01, Ste01, Ste04, SFP02, SKC10, THDC09, Wal03, YBA<sup>+</sup>03, ABH<sup>+</sup>18, AFGQO19, AMB<sup>+</sup>18, ARPY19, BE17, BTRZ<sup>+</sup>19, BLOR18, BAP<sup>+</sup>12, CGW19, DTDP14, DHL16, DT19, DAC<sup>+</sup>14, ECG<sup>+</sup>13, EDB19, EKD<sup>+</sup>12, Fem90, FKA<sup>+</sup>17, GR17, Har11, IYK16, IFA15, JdSA<sup>+</sup>17, KT94].

**computing** [LDLD19, LBB17, MEK<sup>+</sup>19, MFB<sup>+</sup>19, MCU<sup>+</sup>13, PPC<sup>+</sup>16, SWA<sup>+</sup>14, STS17, TNLP13, VSHN14, WZHG17, WD19, ZKRA14, Lee03, Ano94a, Ano95a, Ano96a, Ano97b, Ano97c, Ano97a].

**Computing-** [Ano94c, Ano95b].

**Computing/Numerical** [THDC09].

**concurrency** [DGB<sup>+</sup>14]. **Concurrent** [AH93, BMWD87, Fro91, BRGR11].

**Conference** [Gaf88, OL05, KKDV03].

**Configuration** [AEPR92, LTPK17, LBB17].

**Configuring** [PPK<sup>+</sup>04]. **Confined** [ACG<sup>+</sup>90]. **Confinement** [BGB<sup>+</sup>18].

**Conjugate** [AH93, CSV91, MG87, DHL16, KMM16, PSV<sup>+</sup>16, PF16].

**conjugate-gradient** [DHL16]. **Connecting** [BKS<sup>+</sup>07]. **Connection** [Ano87d, Don87, BJ92, CC95, GKH<sup>+</sup>91, HZ91]. **Conquer** [Cza03]. **consensus** [KDNE18].

**conservation** [LH19]. **Consistent** [KS09a]. **Consortium** [GS09]. **Constant** [MP94].

**Constrained** [FSS13, LJC<sup>+</sup>10, NKR90, IK18]. **constraint** [DAB<sup>+</sup>12]. **constraint-based** [DAB<sup>+</sup>12].

**Constraints** [CY08, GSHL03, BLOR18, LCZ<sup>+</sup>15].

**construction** [PS12]. **consumption** [BLOR18, CGGC<sup>+</sup>16]. **Contaminant** [ABF<sup>+</sup>99]. **content** [LFB<sup>+</sup>15, MRD<sup>+</sup>15]. **content-aware** [MRD<sup>+</sup>15]. **Context** [KDH11, QH08, YBA<sup>+</sup>03, CZR<sup>+</sup>11].

**Context-Aware** [YBA<sup>+</sup>03].

**context-based** [CZR<sup>+</sup>11]. **continuous** [AWWG19]. **continuum** [BTRZ<sup>+</sup>19].

**contrast** [RPdB<sup>+</sup>19]. **Contributors** [Ano91b, Ano91a, Ano92g, Ano96c, Ano96a, Ano97b, Ano97c, Ano98a]. **Control** [AK91, AK93, Dar00, DFH<sup>+</sup>96, VR00, HRW19, WDW<sup>+</sup>12]. **Controlled** [DSD<sup>+</sup>91].

**Controllers** [MFOAGE18]. **controlling** [OF17]. **converge** [CCBL18]. **Convergence** [BBR10, DFS<sup>+</sup>05]. **convex** [SH93].

**Cooperative** [DBA<sup>+</sup>09, DCL<sup>+</sup>08, kLCCW07, IK18].

**Coordinate** [YRA<sup>+</sup>02]. **Coordinated** [FP02]. **coprocessor** [VEMR17].

**coprocessors** [HLS<sup>+</sup>17]. **Copy** [SWHP05].

**CORBA** [PPR03]. **Core** [Bri10, DFS<sup>+</sup>05, MS05, AKC<sup>+</sup>19, BBG<sup>+</sup>14, BH12, CAE<sup>+</sup>13, DEE<sup>+</sup>12, DDKK19, KDH11, KILL13, LMT<sup>+</sup>12, LDW<sup>+</sup>12, LNSMMA15, MSPSI15, PSV<sup>+</sup>16, SSR<sup>+</sup>14, TKA<sup>+</sup>17, Udd17, VEMR17, VRB<sup>+</sup>19, VOL<sup>+</sup>14, YFS<sup>+</sup>14, GLZS14]. **cores** [DJJ<sup>+</sup>19, FU12, INY<sup>+</sup>14, LYL<sup>+</sup>16]. **Cornell** [Mer87]. **correction** [AG18, YFS<sup>+</sup>14].

**Correlating** [CS14]. **correlation** [CLG13, GHL15]. **Correspondence** [BH99, IS96, PTGB02, WLB92].

**Corrigendum** [Ano19]. **Cortical** [WW92].

**Coscheduling** [BL99, CAK<sup>+</sup>07]. **Cost** [LJC<sup>+</sup>10, PPK09, TR17].

**Cost-Constrained** [LJC<sup>+</sup>10]. **Coulomb**



[DGD<sup>+</sup>04]. **Coupled** [HAF<sup>+</sup>96, IKY<sup>+</sup>10, JDD18, KT99, LJO05, PK04, KC18, NOM<sup>+</sup>19]. **Coupler** [CJK<sup>+</sup>05, CVJ12]. **Coupling** [HD05, JLO05, LJO05, PPR03]. **CPL6** [CJK<sup>+</sup>05]. **CPU** [BL99, GHL15, HTD<sup>+</sup>14, SHK<sup>+</sup>18, VRB<sup>+</sup>19]. **CPU-GPU** [HTD<sup>+</sup>14]. **CPU-MIC** [SHK<sup>+</sup>18]. **CPUs** [KDH11, SFLC18, TKA<sup>+</sup>17]. **Crash** [HTSK90, CEL<sup>+</sup>97]. **Cray** [ABF<sup>+</sup>08, AEPR92, DD89, DD91, Del93, GCL93, LT88, Ma00, MYC92, MSK92, THL88, YW93, ABF<sup>+</sup>99, DH96, Lai93, McN89, SBBS06]. **Cray-1s** [McN89]. **CRAY-2** [DD89, DD91, GCL93]. **CRAY-T3E** [Ma00]. **CRE2017** [Mas19]. **creation** [KILL13]. **Creutz** [BRT<sup>+</sup>92]. **Crisis** [BE07]. **Criteria** [BKRSR09]. **critical** [SDJ17]. **critical-path** [SDJ17]. **Cross** [PLS05, CLG13, WVL<sup>+</sup>16]. **cross-bundle** [WVL<sup>+</sup>16]. **cross-correlation** [CLG13]. **Cross-Platform** [PLS05]. **crowd** [VOL<sup>+</sup>14]. **CRPC** [CDP<sup>+</sup>94]. **crucial** [SZ11]. **cryo** [SSCF19]. **cryo-EM** [SSCF19]. **Crystal** [Cla91]. **crystalline** [HXW<sup>+</sup>13]. **crystallisation** [WSD<sup>+</sup>14]. **Crystallography** [CDH<sup>+</sup>93]. **CUBE** [JBOT19]. **CUDA** [DSH<sup>+</sup>16, GDKWS15, SDJ17, ZZG<sup>+</sup>14]. **CUDA-accelerated** [GDKWS15]. **CUDA-enabled** [DSH<sup>+</sup>16]. **CUMULVS** [GKP97, KWB06]. **Current** [Cap09, GFD05, GCSK13, LVA<sup>+</sup>13]. **CYBER** [ABAS87, McN89]. **cycle** [AHB<sup>+</sup>16]. **CYDRA** [HRM89]. **CYDRA-5** [HRM89].

**D** [KR94, KR95, SSCF19, VSS<sup>+</sup>13, AKW19, ARR99, ARPY19, BGM15, BG00, CSGM17, CM97, FIMU19, GGS01, HSLK11, KC18, PR95, THL88, Wal18]. **D-GM** [ARPY19]. **DAC** [Cza03]. **DAG** [TR17]. **DAG-based** [TR17]. **Daily** [Mar89b]. **DAME** [PG18]. **DAMPVM** [Cza03]. **DAMPVM/DAC** [Cza03]. **DARE** [CGT<sup>+</sup>18]. **Data** [ACF<sup>+</sup>11, AF09, Ano87e, BCG<sup>+</sup>10, BHK<sup>+</sup>88, BCM<sup>+</sup>03, BH06, CFK<sup>+</sup>94, CBW95, DP05, DH96, DZ07, DT17, DFT<sup>+</sup>15, Fei99, Fol90a, GMLP08, GG11, HJ96, JW06, Joh01, KUE<sup>+</sup>00, LR07, MAJJS03, RRV06, SS89, SS10, VS03, WHL03, ZRC<sup>+</sup>06, AKW19, APD<sup>+</sup>15, ATL<sup>+</sup>15, AMB<sup>+</sup>18, BTRZ<sup>+</sup>19, CDL<sup>+</sup>19, CCBL18, DCN17, DT19, EMP<sup>+</sup>18, FKA<sup>+</sup>17, HLW<sup>+</sup>16, KV19, LGDH16, MRD<sup>+</sup>15, Ozs16, PH91, PG18, RWM17, STP<sup>+</sup>13, SZ11, TDG<sup>+</sup>19, TDM<sup>+</sup>17, WDH<sup>+</sup>15]. **data-driven** [BTRZ<sup>+</sup>19]. **Data-Intensive** [GMLP08, KUE<sup>+</sup>00, ACF<sup>+</sup>11, FKA<sup>+</sup>17]. **Data-Parallel** [HJ96]. **Database** [MS09]. **Databases** [RGB<sup>+</sup>18]. **Dataflow** [ACM88, Sha88, JDD18, WZH17]. **dataflow-based** [JDD18, WZH17]. **Datagrid** [PHB04]. **Datasets** [SE92, ZM07]. **Datatype** [SWHP05]. **Davidson** [UF89]. **Deadlock** [LBB17]. **Deadlock-free** [LBB17]. **Dealing** [GSHL03]. **Debuggers** [Ano01a]. **Decision** [GWKN08]. **Decision-Making** [GWKN08]. **Decomposition** [BLRR01, Cha88, GCD97, Meu88, NK89, DFT<sup>+</sup>15, IKMS<sup>+</sup>19, Lai93, YZC<sup>+</sup>15]. **Decoupled** [PH91]. **Dedicated** [CAK<sup>+</sup>07, GSHL03, DJJ<sup>+</sup>19]. **deep** [CHT<sup>+</sup>19, VRB<sup>+</sup>19]. **defined** [ADMP18, JDAD19]. **Defining** [KKS04]. **deformable** [SE12]. **degrees** [TAM<sup>+</sup>16]. **degrees-of-freedom** [TAM<sup>+</sup>16]. **Delay** [Rao02]. **Demand** [EW06, dPIa03]. **Dense** [Ano02k, BGG05, BDL<sup>+</sup>07, Ede93, LRLG19, MBvdG13, SCR11]. **density** [LNSMMA15]. **Department** [Kit90]. **Dependent** [MBF<sup>+</sup>11]. **Deployable** [GCL93]. **Deploying** [CdVL<sup>+</sup>18]. **Deployment** [CDCV06, GCL93, GMLP08]. **deposited** [GSK<sup>+</sup>15]. **Deposition** [MD99]. **depth** [JDAD19]. **derivatives** [Haj93].

**Derived** [SWHP05, MDH<sup>+</sup>18]. **deriving** [IGDQO19, MBvdG13]. **describing** [ABH<sup>+</sup>18]. **Design** [AEG<sup>+</sup>03, BGI<sup>+</sup>99, BBH<sup>+</sup>13, BBMB19, BRM03, BH06, CE00, CLP<sup>+</sup>99, CTD<sup>+</sup>05, Dar00, DZRS99, DFH<sup>+</sup>96, DJC05, EGMP93, FGC<sup>+</sup>05, GJMS88, GCCC<sup>+</sup>03, GHM<sup>+</sup>10, GD09, KS09b, PPK09, SD87, BG11, DTL19, UZM<sup>+</sup>14, UCZ<sup>+</sup>15, Mar87a]. **Designing** [RWM17, SWHP05, SKS<sup>+</sup>13]. **Desmos** [SDI<sup>+</sup>19]. **Detailed** [EDS95, SBBS06]. **Detection** [CBL10, YZC<sup>+</sup>15, AG18, BSS15, HGMW12, KDNE18, VOL<sup>+</sup>14, WLG<sup>+</sup>18, ZCZ<sup>+</sup>13]. **Detector** [DZDR95, Ano19, BBG<sup>+</sup>18]. **Determination** [BHK<sup>+</sup>88, CSY10]. **Determined** [CGB<sup>+</sup>94]. **Deterministic** [DR06, DMSMG18, SLL<sup>+</sup>19]. **DEUS** [RAB<sup>+</sup>15]. **developed** [CVJ12]. **Developing** [THDC09, PPC<sup>+</sup>16]. **Development** [Ano01a, BCC<sup>+</sup>01, BBD00, Dar99, HL00, HRM89, Kal09a, LC90, LD07, MM90, MS19, PPS09, Eri88]. **Development/Tuning** [Kal09a]. **Developments** [YSS<sup>+</sup>06]. **device** [Lai93, OF17]. **Devices** [PHC<sup>+</sup>10, RKKC90, Rad18]. **diagnosis** [DCM<sup>+</sup>17]. **diagonal** [YLL<sup>+</sup>14]. **Diagrams** [FWZ91]. **Dialogue** [LS06]. **Diego** [Mai87]. **Dielectric** [ZOF90]. **Diet** [CD06]. **Difference** [CC95, THL88, EKf<sup>+</sup>19]. **different** [LWT<sup>+</sup>11]. **Differential** [Key09, Meu88, KS89, RMS<sup>+</sup>18]. **differentiation** [HHSM19]. **diffraction** [EEL15]. **Diffusion** [BFNV07, EDS95, SG91, TWK87, LMT<sup>+</sup>12]. **Diffusion-Limited** [TWK87]. **diffusion/filtering** [LMT<sup>+</sup>12]. **Digital** [MPG93, YFH<sup>+</sup>96, GHL15]. **dilation** [LST15]. **Dimensional** [BCZM07, CSY10, EGG05, LT90, MT89, BE17, KS89, KRR19, LSS93, YFS<sup>+</sup>14]. **Dimensionality** [BFLL99]. **Dimensions** [TWK87]. **Dip** [LT90]. **Dipole** [DGJ09]. **Direct** [Bri10, CM97, HVWS09, HVSW09, LWL05]. **Direction** [Mah90]. **Directionally** [SZC12]. **Directions** [Fol90a]. **Discharge** [YW93]. **discontinuous** [AWWG19]. **Discovery** [AEG<sup>+</sup>03, AAF<sup>+</sup>01, ASAK19, AEG<sup>+</sup>03]. **Discrete** [DGJ09, Ham91, DMSMG18, Mon12]. **discretizations** [LH19]. **discriminating** [SKS<sup>+</sup>13]. **disembarking** [GDS17]. **Disk** [KNP<sup>+</sup>87]. **Dislocation** [HSLK11]. **Disordered** [KVY<sup>+</sup>90]. **dispel4py** [FKA<sup>+</sup>17]. **Dispelling** [Ano87c]. **Dissemination** [GL97]. **Dissolution** [Cla91]. **Distance** [HME90, KR11]. **Distances** [KTWL18]. **Distributed** [AKP08, AF09, BGG05, BFLL99, BGF02, CWHP99, CYT<sup>+</sup>02, CLF87, CB95, Dee10, DFMD94, DCCS10, EDSV06, GKN<sup>+</sup>96, GGS01, Gir02, HC10, HD05, HdV18, JMP02, KT99, LWOB97, MYCR06, MWAR<sup>+</sup>87, Mat95, MCW<sup>+</sup>00, Nag89, NKP<sup>+</sup>00, QWIC02, Rao02, RBMF87, SWG<sup>+</sup>03, SPNB14, YIYD19, YRA<sup>+</sup>02, ZRC<sup>+</sup>06, dPIaA03, ABH<sup>+</sup>18, CBD<sup>+</sup>17, EDB19, GEKO19, JRT16, JO92, THDS19]. **Distributed-Memory** [MCW<sup>+</sup>00, YIYD19]. **Distributing** [CBSB01]. **Distribution** [TCW06, TC10]. **Distributions** [DZ07]. **Divide** [Cza03]. **Divide-and-Conquer** [Cza03]. **dividends** [DTL19]. **Divisible** [DLG06, MYCR06]. **Division** [Bus87, Don89]. **DNA** [DTDP14, HB90, MP18, PRT90]. **Docking** [GHM<sup>+</sup>10]. **DOE** [HBSM03]. **Domain** [Cha88, CDH<sup>+</sup>97b, GCD97, Lai93, Meu88, WCDS99, CSGM17, IKMS<sup>+</sup>19]. **Domain-Specific** [CDH<sup>+</sup>97b]. **Donation** [TCW06]. **Donation-Based** [TCW06]. **Double** [PRT90]. **Drift** [BFNV07]. **Drift-Diffusion** [BFNV07]. **Drive** [HE01, PPS09]. **Driven** [CHZ02, DCL<sup>+</sup>08, YB07, BTRZ<sup>+</sup>19, DAB<sup>+</sup>12]. **drug** [MSPSI15]. **Dual** [BBC<sup>+</sup>00, FT19, Ish91].

**Dual-Level** [BBC<sup>+</sup>00]. **Duration** [CY08]. **DV** [TKSK88]. **DV-X** [TKSK88]. **Dynamic** [AAF<sup>+</sup>01, ABAS87, BCM<sup>+</sup>03, BG00, CY08, DLY<sup>+</sup>98, DFMD94, GFD05, HWP03, IMB<sup>+</sup>19, SCB<sup>+</sup>95, SVN09, TM99, LGDH16, MJD16, SCB14]. **Dynamical** [DFS<sup>+</sup>05, FBW<sup>+</sup>87, HT04b, MS05, SWW94, DEE<sup>+</sup>12, DDKK19, LMT<sup>+</sup>12]. **Dynamics** [ACD07, BMT89, CGB<sup>+</sup>94, Cha88, CWG09, DQFW90, DGD<sup>+</sup>04, Gen88, Gun00, HL10, HSLK11, JL89, KVY<sup>+</sup>90, MP94, Nak99, NHG<sup>+</sup>96, PRT90, RBMF87, SK90, ABH<sup>+</sup>18, AKC<sup>+</sup>19, AKW19, CHW<sup>+</sup>15, HXW<sup>+</sup>13, KKL<sup>+</sup>19, SDI<sup>+</sup>19].

**E-Science** [HWP03, HT04a]. **Early** [GKN<sup>+</sup>96, GNTLH97, HGD91, Kal09a, SLG95]. **Earth** [DVW<sup>+</sup>12, ESW<sup>+</sup>12, MEK<sup>+</sup>19, CTD<sup>+</sup>05, CVJ12, DEL<sup>+</sup>12, IKY<sup>+</sup>10]. **earthquake** [AHB<sup>+</sup>16, CMS<sup>+</sup>11, BAM<sup>+</sup>16]. **earthquake-cycle** [AHB<sup>+</sup>16]. **ease** [MFOAGE18]. **EC2** [Pap11]. **ECG** [Arn07]. **ECJ** [CdVL<sup>+</sup>18]. **Ecological** [WBG06]. **Econometric** [ABAS87, GP93, PS87]. **Economic** [BE07, LC90, NKR90, SG07]. **Economic-Based** [SG07]. **Economics** [AK91]. **Ecosystem** [WBG06, AFGQO19]. **Eddy** [CK01]. **edge** [BTRZ<sup>+</sup>19, CSGM17, Rad18]. **edge-emitting** [Rad18]. **edge-FEA** [CSGM17]. **edge-to-cloud** [BTRZ<sup>+</sup>19]. **editor** [DT18, DT19, WD19, DT17, WD18, dA03]. **Editorial** [CDH<sup>+</sup>97a, Don92, DT09, Mar92, Mar94, Wit92]. **Editors** [BM13]. **Education** [Mah90, Sab91, KT94]. **Effect** [SKSG19]. **Effective** [BCK<sup>+</sup>89, Pan97]. **effectiveness** [TR17]. **Effects** [WBM90, Haj93]. **Efficacy** [GWKN08]. **Efficiency** [ABAS87, DFS<sup>+</sup>05, GHM<sup>+</sup>10, ATD17, ECG<sup>+</sup>13, JdSA<sup>+</sup>17, MJD16, SFLC18, UZM<sup>+</sup>14]. **Efficient** [ACG<sup>+</sup>90, AEPR92, BRR17, CDG<sup>+</sup>14, DMT97, GMLP08, HS93, KC92a, KC92b, KKL<sup>+</sup>19, KUE<sup>+</sup>00, LR09, LRO10, LP10, MG87, MFP<sup>+</sup>17, OWO98, SC04a, TD08, BBMB19, KV19, LNSMMA15, MMDA19, Ozs16, RMV<sup>+</sup>19, SDI<sup>+</sup>19, TKA<sup>+</sup>17, Wal18]. **eigensolver** [HTD<sup>+</sup>14]. **Eigenvalue** [HS93, Tis97, UF89]. **Eigenvalues** [KC92a, KC92b]. **ELAPS** [PB19]. **Elastic** [ACD07]. **Electromagnetic** [DGP<sup>+</sup>97, CMN12]. **electromagnetics** [CSGM17, OGM<sup>+</sup>16]. **Electromagnetism** [BGG05]. **Electron** [FFR<sup>+</sup>10, KVY<sup>+</sup>90]. **Electronic** [FWZ91, TMW<sup>+</sup>99, HTD<sup>+</sup>14, HIT<sup>+</sup>14]. **electrophysiology** [BSW<sup>+</sup>14]. **Electroweak** [BGK<sup>+</sup>90]. **Element** [AJL<sup>+</sup>97, BBA87, DFS<sup>+</sup>05, EGG05, FSN08, GCD97, KM95, MMD98, MS02, THC<sup>+</sup>96, de 89, AFL<sup>+</sup>18, BSW<sup>+</sup>14, DWT<sup>+</sup>19, DEE<sup>+</sup>12, EAG<sup>+</sup>19, MGS<sup>+</sup>15, Mon12, PH19, SCKW19]. **Eliminating** [HME90]. **embedded** [KPR17, KK01]. **Embedded/** [KK01]. **emergency** [GDS17]. **emerging** [HFV<sup>+</sup>12, IMH<sup>+</sup>11, IMH<sup>+</sup>12, WD19]. **emitting** [Rad18]. **Empirical** [VDB04, CBM13]. **Employing** [GVF<sup>+</sup>18]. **emulation** [BAP<sup>+</sup>12, LST15]. **Enabled** [CD06, CD97, CBB<sup>+</sup>04, DD06, MWM<sup>+</sup>08, DSH<sup>+</sup>16, LDLD19]. **Enabling** [AGR<sup>+</sup>03, BTRZ<sup>+</sup>19, DGB<sup>+</sup>14, FKT01, Ste09b]. **Encoder** [BKRSR09]. **Encoding** [DLY<sup>+</sup>98]. **encryption** [KV19]. **End** [BV11, GHM<sup>+</sup>10, LD07, NKiN<sup>+</sup>08, PA11, Rao02, SC09]. **End-To-End** [GHM<sup>+</sup>10, Rao02, SC09]. **Endangered** [BB02]. **Endmember** [HC08]. **endpoints** [DGB<sup>+</sup>14]. **energetic** [GSK<sup>+</sup>15]. **energies** [PUR94]. **Energy** [BEH<sup>+</sup>90, ECG<sup>+</sup>13, HTSK90, IHMM87, LTPK17, LWT<sup>+</sup>11, Mir90, SGFC09, YCHH90, ZOF90, ATD17, BRGR11, BLOR18, BBMB19, CHT<sup>+</sup>19, EJD<sup>+</sup>19, JdSA<sup>+</sup>17, LRLG19, SKSG19, Kit90]. **energy-efficient** [BBMB19]. **Energy-optimal** [LTPK17]. **energy-saving**

[SKSG19]. **Engine** [DCL<sup>+</sup>08, HBSP08, WZHG17, SS10]. **Engine-Driven** [DCL<sup>+</sup>08]. **Engineering** [Bro88, Dar00, DW97, Joh01, MMS88, Nas92, PK04, ADMP18, Mar88a]. **Enhance** [WVL<sup>+</sup>16]. **Enhanced** [BPK<sup>+</sup>07]. **Enhancement** [AAC<sup>+</sup>97, WT99]. **Enhancements** [BDG<sup>+</sup>95]. **Enhancing** [FSC<sup>+</sup>11, HLW<sup>+</sup>16]. **Ensemble** [BBR10, VSS<sup>+</sup>13]. **Entity** [BGF02]. **Entropy** [CBW95]. **entry** [CSGM17]. **Environment** [AAF<sup>+</sup>01, CCH<sup>+</sup>88, DD91, DL97, DLB07, GL97, MM90, dPIaA03, ABH<sup>+</sup>18, ASAK19, ARPY19, KKL<sup>+</sup>19, LSS93, WLVL<sup>+</sup>96]. **Environmental** [DLY<sup>+</sup>98, TMMR10]. **Environments** [Ano01a, CWHP99, CDH<sup>+</sup>97b, DD06, Dee10, DFH<sup>+</sup>96, DCL<sup>+</sup>08, Eyr06, FSS13, Gan88, HBSP08, Mat95, MA89, RIF01, THC<sup>+</sup>96, WvNM<sup>+</sup>06, ADMP18, CCBS11, HI12, HI13, IH15, NC18]. **Epidemic** [KDNE18]. **epidemiological** [BEW16]. **Epiphany** [VEMR17]. **epistasis** [WLG<sup>+</sup>18]. **Equation** [BFL99, BEF<sup>+</sup>95, Fro91, IKY<sup>+</sup>10, Key09, EKf<sup>+</sup>19, KRR19]. **Equation-Based** [Key09]. **Equations** [Meu88, SBF90, SMW87, KS89, RMS<sup>+</sup>18, ZZG<sup>+</sup>14]. **Equilibration** [NKR90]. **Equilibrium** [JP93, NK89]. **Era** [BM13, ME14, BM12, Con88]. **Erratum** [KR95]. **error** [BSS15]. **Errors** [FCLG07, LFB<sup>+</sup>15, SLL<sup>+</sup>19, YZC<sup>+</sup>15]. **Estimates** [LS06, McN89]. **Estimation** [LR09, LRO10, BE17, LNSMMA15, SH93]. **ETA** [DD89]. **ETA-10P** [DD89]. **Ethylene** [DVC88]. **Eulerian** [INY<sup>+</sup>14]. **European** [ISD89, MHW15, PHB04]. **EUROPVM** [OL05]. **EUROPVM/MPI** [OL05]. **EuroPVMMPI** [KKDV03]. **EV7** [KHP<sup>+</sup>04]. **evacuation** [GDS17]. **Evaluate** [WGI90]. **Evaluating** [BBDR95, GFD05, LRG<sup>+</sup>16, VC89, YFS<sup>+</sup>14]. **Evaluation** [ATN<sup>+</sup>00, ABF<sup>+</sup>08, Ano87b, BCK<sup>+</sup>89, BIC<sup>+</sup>10, BFNV07, BG02, BDG<sup>+</sup>00, CDQS04, CLP<sup>+</sup>99, KHP<sup>+</sup>04, NOM<sup>+</sup>19, RBL08, SWHP05, WOG95, YIN<sup>+</sup>11, AKP<sup>+</sup>18, BBG<sup>+</sup>14, HIT<sup>+</sup>14, NMI<sup>+</sup>19]. **Evaluations** [PPK09]. **Event** [NRR97, BEW16, DAB<sup>+</sup>12]. **event-based** [BEW16]. **event-driven** [DAB<sup>+</sup>12]. **Events** [BG00, JDAD19]. **Eviction** [BH06]. **Evolution** [DAC<sup>+</sup>14, LBP18, WJS<sup>+</sup>90]. **evolutionary** [CdVL<sup>+</sup>18, HdV18]. **Exact** [ZK93]. **Example** [NBB<sup>+</sup>96]. **ExaSAT** [UCZ<sup>+</sup>15]. **Exascale** [AF09, Cap09, CGG<sup>+</sup>09, DBA<sup>+</sup>09, DBM<sup>+</sup>11, GD09, GL09, Her09, Kal09b, KS09a, KS09b, LAV09, Luc09, Lus09a, MMN09, PPS09, SG09b, SC09, Ste09b, BCR<sup>+</sup>14, MEK<sup>+</sup>19, SWA<sup>+</sup>14, UCZ<sup>+</sup>15, VFJ<sup>+</sup>15, YB12]. **Excited** [WLC91]. **Excited-State** [WLC91]. **Excitement** [RAGW93]. **Executing** [WG07]. **Execution** [MS09, AHB<sup>+</sup>16, DAB<sup>+</sup>12, JDD18, KILL13, TKA<sup>+</sup>17]. **executions** [RV15]. **exhaustive** [PS12]. **Expand** [GCCC<sup>+</sup>03]. **expansion** [AMC<sup>+</sup>18]. **Expansions** [KMPJ08]. **Expect** [Pan92]. **Expectation** [Amd88]. **Experience** [HGD91, YHG<sup>+</sup>07]. **Experiences** [DD06, GKN<sup>+</sup>96, Reu92, ZKRA14]. **Experiment** [HME90]. **Experimental** [BCC<sup>+</sup>06, EGMP93, JW06, KKCB98, KLJ87, PB19]. **Experimentation** [Ano87a]. **Experiments** [AAF<sup>+</sup>01, AK91, Gir02, PR95]. **Explicit** [WBG06, EAG<sup>+</sup>19, AGC<sup>+</sup>19]. **Exploiting** [Bri10, SCR11, WWA<sup>+</sup>11, LFB<sup>+</sup>15]. **Exploration** [KPM<sup>+</sup>96, BBMB19]. **Explore** [JLL04]. **Exploring** [CCO<sup>+</sup>19, CBD<sup>+</sup>17, HAF<sup>+</sup>96, IMS16]. **Expression** [RS03]. **Expressions** [BBDR95]. **expressive** [CRS<sup>+</sup>19]. **Extended** [Ano02b]. **Extending** [GRC08, Pap11, LRG<sup>+</sup>16]. **Extensible** [CJK<sup>+</sup>05, KHS<sup>+</sup>19]. **Extension**

[SVN09, AHB<sup>+</sup>16]. **Extraction** [CBL10, HC08]. **Extreme** [Her09, Key09, KC92a, KC92b, MPS15, ZKRA14, AMB<sup>+</sup>18, BEK<sup>+</sup>18, DCM<sup>+</sup>17, HRW19, KDNE18, PBE<sup>+</sup>19]. **Extreme-scale** [ZKRA14, AMB<sup>+</sup>18, BEK<sup>+</sup>18, DCM<sup>+</sup>17].

**face** [CdVL<sup>+</sup>18]. **Facility** [Ano87a, Don89]. **FACOM** [IHMM87]. **Factor** [DH96]. **Factorization** [DD89, DD91, IGDQO19, Jea13, YIYD19]. **factorizations** [DEKV92]. **Failure** [GCSK13, KS05, Ano19, BBH<sup>+</sup>13, BBG<sup>+</sup>18, KDNE18]. **failures** [SWA<sup>+</sup>14, TNLP13]. **farm** [KBY<sup>+</sup>19]. **Farming** [CKPD99, MBHF15]. **Fast** [BGM15, BEW16, BMT89, CvG11, DIB00, PS12, SWW94, IYK16, KDH18, SCR11, TSKK88, TDM<sup>+</sup>17, YB12, CKE08, KNP<sup>+</sup>87, LDW<sup>+</sup>12, MJ04]. **Fault** [BHK<sup>+</sup>06, Cap09, FD04, FGC<sup>+</sup>05, GKP97, GL04, JSSZ09, KWB06, WvNM<sup>+</sup>06, ASHH16, AG18, LRG<sup>+</sup>16, MSHPV18, SKZ<sup>+</sup>18, Sta19, SMZ<sup>+</sup>18, YZC<sup>+</sup>15]. **fault-tolerance** [SMZ<sup>+</sup>18]. **Fault-Tolerant** [BHK<sup>+</sup>06, FD04, WvNM<sup>+</sup>06, ASHH16]. **faults** [RMS<sup>+</sup>18]. **Faulty** [LK01]. **FEA** [CSGM17]. **Feasibility** [KR94, KR95, CCO<sup>+</sup>19]. **Feature** [PTGB02, STP<sup>+</sup>13]. **Feature-based** [STP<sup>+</sup>13]. **features** [CH13, IMS16, PNFC16, PUR94, ZKRA14]. **February** [Sci92]. **federation** [Har11]. **Feedback** [CGB<sup>+</sup>94]. **Feedback-Scaling** [CGB<sup>+</sup>94]. **FEM** [RMV<sup>+</sup>19]. **Fermi** [NTD10]. **Fermions** [ZK93]. **Fernbach** [Mar91]. **FETI** [GCD97, RMV<sup>+</sup>19]. **FFT** [Bai88, GGS01, KMPJ08, Wad99]. **FFT-Based** [GGS01]. **Field** [HC08, HSLK11, PUR94, VSHN14]. **File** [BIC<sup>+</sup>10, GCCC<sup>+</sup>03, LRT07, kLCCW07, HLW<sup>+</sup>16]. **Film** [MD99]. **films** [GSK<sup>+</sup>15]. **filter** [LGDH16]. **filtering** [LMT<sup>+</sup>12].

**Financial** [BE07, HZ91]. **Finding** [dRADS<sup>+</sup>18b, FCLG07]. **Fine** [ACM88, BBG<sup>+</sup>10, LH18, WvNM<sup>+</sup>06, HTD<sup>+</sup>14]. **Fine-Grain** [ACM88]. **Fine-Grained** [BBG<sup>+</sup>10, WvNM<sup>+</sup>06, LH18, HTD<sup>+</sup>14]. **Finite** [AJL<sup>+</sup>97, BBA87, CC95, CBV97, EGG05, GCD97, KM95, MMD98, MS02, MS05, PH19, PLS05, THC<sup>+</sup>96, THL88, de 89, AFL<sup>+</sup>18, BSW<sup>+</sup>14, DWT<sup>+</sup>19, EKF<sup>+</sup>19, LH19, SCKW19]. **Finite-Element** [MS02, BSW<sup>+</sup>14]. **Finite-Volume** [MS05, LH19]. **First** [DQFW90, GKN<sup>+</sup>96, TMWS91, HIT<sup>+</sup>14, MMDA19]. **first-principles** [HIT<sup>+</sup>14]. **fixed** [BSK14]. **Flames** [EDS95, SG91]. **FLASH** [DAC<sup>+</sup>14, JKD<sup>+</sup>11]. **Flexible** [GMLP08, CVJ12, DGB<sup>+</sup>14]. **Flink** [KWEF18]. **FLO67** [WLB92]. **Floating** [BSBF89, CDL<sup>+</sup>19, LH18]. **floating-point** [CDL<sup>+</sup>19, LH18]. **flood** [HPW<sup>+</sup>16]. **Flow** [ABF<sup>+</sup>99, DD06, HKK88, PGTS10, RKKC90, SS89, SK90, FIMU19, HHSM19, KDH18, LSS93, WDW<sup>+</sup>12]. **Flowfield** [MKG90]. **Flows** [CB95, GMWG10, MYC92]. **Fluid** [Cha88, DFMD94, Gen88, HL10, JL89, KT99, LWL05, PGTS10, RBMF87, SWW94, SS89, SK90, YW93, KC18, LSS93]. **Fluid-Structure** [KT99, KC18]. **Fluorinated** [DFC90]. **fly** [GSA<sup>+</sup>19]. **Fock** [MMDA19, CLM<sup>+</sup>16, KKCB98, TMW<sup>+</sup>99]. **focused** [JRT16]. **Footprint** [JMC05]. **force** [PUR94]. **Forecasting** [MHW15]. **Forecasts** [MHW15]. **forests** [PNFC16]. **format** [GG14, GGO16]. **Forming** [CM97]. **Fortran** [KR95, DL97, KR94]. **Fortran90** [LJO05]. **Forum** [Don02a, Don02b]. **Forward** [AK93, Luc09, THL88, HRW19]. **Foundation** [Web91, Blo87]. **Four** [Tho90]. **Four-Band** [Tho90]. **Fourier** [KNP<sup>+</sup>87, LDW<sup>+</sup>12, MJ04, SSCF19]. **FPGA** [HC08, MHS11, PC08a, RGB<sup>+</sup>18]. **FPS** [LT88]. **Fracture** [BG00, LPB<sup>+</sup>16]. **Framework** [CAK<sup>+</sup>07, DGJ09, IYV04,

PGTS10, SSB<sup>+05</sup>, SB04, TMMR10, vLRA<sup>+03</sup>, FKA<sup>+17</sup>, GEKO19, JBOT19, MBC<sup>+18</sup>, MS19, PPC<sup>+16</sup>, PB19, SE12, SMZ<sup>+18</sup>, TDG<sup>+19</sup>, YWL<sup>+14</sup>, CTD<sup>+05</sup>. **Frankenstein** [Wit92]. **Free** [MT89, LBB17]. **Free-Lagrange** [MT89]. **freedom** [TAM<sup>+16</sup>]. **Frequency** [TC10, CSGM17, SKSG19]. **front** [FIMU19]. **Frontwidth** [BMWD87]. **FTS** [BE18]. **Fueling** [Her91]. **Fujitsu** [Ish91]. **Full** [AEPR92, JRT16, LK01, RAB<sup>+15</sup>, THC<sup>+11</sup>]. **Full-wave** [JRT16]. **Fully** [HR97, YW93, CH13, EAG<sup>+19</sup>]. **Fun** [RAGW93]. **Function** [ODD07, PPK09, ZOF90, EKF<sup>+19</sup>]. **function-generated** [EKF<sup>+19</sup>]. **Functional** [LR07]. **Functions** [LS06]. **Fundamental** [MR90]. **Fusion** [ACG<sup>+90</sup>, BGB<sup>+18</sup>, DSD<sup>+91</sup>, FWSW02, FP02, YK04, WET<sup>+19</sup>]. **Future** [BSBF89, HBSM03, Wil87, BAP<sup>+12</sup>, DPA<sup>+18</sup>]. **FV** [LMT<sup>+12</sup>]. **fv3** [SDF<sup>+17</sup>]. **FVCOM** [Cow08]. **FX** [DD91]. **FX/80** [DD91].

**G** [MCS<sup>+06</sup>]. **G2** [Cot04]. **Galaxies** [Her91, NBB<sup>+96</sup>]. **Galerkin** [AWWG19]. **Games** [EGMP93]. **GANESH** [BPK<sup>+07</sup>]. **Gap** [SS99]. **Gas** [CH94, LRBS89, MKG90]. **Gases** [WBM90]. **GASPI** [SKZ<sup>+18</sup>, SIC<sup>+19</sup>]. **Gate** [HC08]. **Gather** [TRS<sup>+10</sup>]. **Gauge** [Mor89a]. **GEMM** [NTD10]. **Gene** [MAB<sup>+13</sup>, RS03, YIN<sup>+11</sup>, GNB11, KMH<sup>+14</sup>, SSU<sup>+12</sup>]. **Gene/P** [MAB<sup>+13</sup>, GNB11, SSU<sup>+12</sup>]. **Gene/Q** [KMH<sup>+14</sup>]. **General** [PLS05, VC89, BE17, CRS<sup>+19</sup>, MMHL11]. **general-purpose** [BE17]. **generalized** [HTD<sup>+14</sup>, GLGLB<sup>+11</sup>]. **generated** [EKF<sup>+19</sup>]. **Generation** [DE03, HT04a, KMPJ08, BAP<sup>+12</sup>, LDLD19, MFB<sup>+19</sup>, MMDA19, TRS13, VRB<sup>+19</sup>, ZKRA14]. **Generator** [PMS<sup>+04</sup>, DL09]. **Generic** [CAK<sup>+07</sup>, HLC<sup>+19</sup>]. **Genetic** [RS03, NMAE13]. **genome** [GDKWS15]. **genome-wide** [GDKWS15]. **genomic** [MBC<sup>+18</sup>]. **Geodesy** [BGG05]. **geographically** [CvG11]. **geophysical** [CMN12]. **geophysics** [SCD<sup>+19</sup>]. **GFLOP** [SBF90]. **Glass** [YSN90]. **Global** [ATN<sup>+00</sup>, Ald89, CZR<sup>+11</sup>, DBA<sup>+09</sup>, GS05, MHW15, SBG10, Tho90, WBM90, DFT<sup>+15</sup>, TAM<sup>+16</sup>, WDH<sup>+15</sup>, NPT<sup>+06</sup>]. **Global-Address-Space** [SBG10]. **Global-aware** [CZR<sup>+11</sup>]. **Globalized** [GKMT00]. **Globally** [SH93]. **Globus** [FK97]. **GloVE** [dPIA03]. **Glow** [YW93]. **Gluons** [BOD<sup>+91</sup>, BEH<sup>+90</sup>]. **GM** [ARPY19]. **Going** [Her09]. **Goodput** [BL99]. **Gordon** [BBD<sup>+17</sup>]. **gossip** [CGW19]. **gossip-inspired** [CGW19]. **GPFS** [BIC<sup>+10</sup>]. **GPGPU** [SDF<sup>+17</sup>]. **GPGPUs** [APD<sup>+15</sup>, KDH11]. **GPU** [AWWG19, ATL<sup>+15</sup>, ARPY19, BGM15, CSGM17, CS14, EEL15, GHL15, GDKWS15, GGO16, HTD<sup>+14</sup>, JC12, JKBW18, KTWL18, KKL<sup>+19</sup>, LPB<sup>+16</sup>, MPD<sup>+12</sup>, MJGL13, OKTR11, OF17, PS12, PNFC16, RV15, RPdB<sup>+19</sup>, SZC12, SPTT08, SE12, SKS<sup>+13</sup>, SDI<sup>+19</sup>, SSCF19, WDW<sup>+12</sup>, YLL<sup>+14</sup>, ZZG<sup>+14</sup>]. **GPU-accelerated** [AWWG19, CSGM17]. **GPU-based** [ATL<sup>+15</sup>, JKBW18, MJGL13, SDI<sup>+19</sup>]. **GPUDirect** [OGM<sup>+16</sup>]. **GPUs** [ATD17, AKP<sup>+18</sup>, FT19, HDL<sup>+15</sup>, HPW<sup>+16</sup>, PF16, SF18, TKA<sup>+17</sup>]. **Gradient** [AH93, CSV91, MG87, DHL16, KMM16, PSV<sup>+16</sup>, PF16]. **Gradient-like** [CSV91]. **GrADS** [BCC<sup>+01</sup>]. **Grain** [ACM88]. **Grained** [BBG<sup>+10</sup>, BGB<sup>+96</sup>, DZRS99, WvNM<sup>+06</sup>, HTD<sup>+14</sup>, LH18]. **Grand** [BEH<sup>+90</sup>, CBB<sup>+96</sup>, DSD<sup>+91</sup>, Kit90]. **granularity** [LQJG16, SKSG19]. **GRAPE** [CKE08]. **Graph** [CDT05, CSC19, GLZS14]. **graphic** [LQJG16, PH19]. **Graphical** [DMQS12, KDO16]. **Graphics** [CLF87, GLGLB<sup>+11</sup>, LP10, MA15, NTD10, RBMF87, Sal87, BE17, CLG13, GHHS15, Mon12, RDG12, RWM17, ZCZ<sup>+13</sup>]. **Graphs**

[LK01]. **Gravitational** [SWW94]. **Gravity** [Ham91]. **Great** [BAM<sup>+</sup>16]. **Green** [ODD07]. **Greenbook**<sup>9</sup> [HBSM03]. **Greenhouse** [WBM90]. **Grid** [CKPD99, Lee03, SBWS99, ASHH16, BCYS11, MCR<sup>+</sup>17, PPC<sup>+</sup>16, PS12, AEG<sup>+</sup>03, AAF<sup>+</sup>01, AGR<sup>+</sup>03, BCCL09, BCM<sup>+</sup>03, BCC<sup>+</sup>01, BPK<sup>+</sup>07, BSCC03, BCC<sup>+</sup>06, CD06, CBSB01, CBB<sup>+</sup>04, CBL06, CCBS11, CY08, DCL<sup>+</sup>08, FKT01, GHM<sup>+</sup>10, GRC08, GHZ10, HBSP08, HT04a, HLP<sup>+</sup>03, Hua03, HWP03, KHK<sup>+</sup>09, LM03, MWM<sup>+</sup>08, Mat03, MCS<sup>+</sup>06, PPK09, PBD<sup>+</sup>01, PHB04, QH08, RIF01, RTRG<sup>+</sup>07, SWG<sup>+</sup>03, Wal03, WBFB04, WPBB01, WHL03, W<sub>v</sub>NM<sup>+</sup>06, YBA<sup>+</sup>03]. **Grid-Based** [GRC08, QH08, LM03]. **Grid-Enabled** [CBB<sup>+</sup>04, MWM<sup>+</sup>08]. **Grid-Ireland** [MCS<sup>+</sup>06]. **Grid<sup>5000</sup>** [BCC<sup>+</sup>06]. **Gridded** [ZM07]. **GridLab** [AGR<sup>+</sup>03]. **GridPACK<sup>TM</sup>** [PPC<sup>+</sup>16]. **GridRPC** [CJ06]. **Grids** [DT99, DT11, Joh01, Ma00, VR00, MMHL11, MGB12, Sta19, BKS<sup>+</sup>07, BBH<sup>+</sup>06, Dee10, Fra05, GMLP08, IKY<sup>+</sup>10, MS09, SG07, SW04, TCW06, vLRA<sup>+</sup>03]. **GridSolve** [YSS<sup>+</sup>06]. **Groundwater** [ABF<sup>+</sup>99, MMD98]. **Group** [Bus87, BCR<sup>+</sup>14]. **Growth** [BCZM07, Blo87, Cla91]. **Guest** [DT18, DT19, WD19, BM13, DT17, WD18, dA03]. **guidance** [SDJ17]. **Guided** [FBBC03, BEK<sup>+</sup>18]. **GWAS** [WLG<sup>+</sup>18]. **Gyrofluid** [KPM<sup>+</sup>96]. **gyrokinetic** [IMW<sup>+</sup>13, INY<sup>+</sup>14, WET<sup>+</sup>19].

**Hadoop** [CdVL<sup>+</sup>18]. **Hadron** [GKH<sup>+</sup>91, Liu90]. **HAMR** [WZHG17]. **Harbor** [BBC<sup>+</sup>00]. **hard** [RMS<sup>+</sup>18]. **Hardware** [BH06, KS09b, Spr06, HDL<sup>+</sup>15, MCU<sup>+</sup>13, MFOAGE18]. **Harmonics** [KMPJ08]. **Harnessing** [HLH<sup>+</sup>19]. **Hartree** [CLM<sup>+</sup>16, KKCB98, MMDA19, TMW<sup>+</sup>99]. **Head** [GKB93]. **Heavy** [QH08, Reu92]. **Heavy-Ion** [Reu92]. **Helicity** [DVC88]. **Helium** [Fro91]. **Helix** [PRT90]. **Helmholtz** [BEF<sup>+</sup>95]. **hemodynamics** [AFL<sup>+</sup>18]. **Hermetic** [YK07]. **Hermitian** [RDG12]. **Heterogeneity** [TCW06]. **Heterogeneity-Aware** [TCW06]. **Heterogeneous** [BM13, BLRR01, BMR06, BG09, CHZ02, CLBS17, Dee10, EGG05, KT99, KS05, LR07, LR09, LRO10, ME14, NBB<sup>+</sup>96, RAGW93, RRV06, VLO<sup>+</sup>08, dRADS<sup>+</sup>18a, CMS<sup>+</sup>11, CGST19, EDB19, GBB18, HGWN14, IMW<sup>+</sup>13, LST15, LDW<sup>+</sup>12, MFP<sup>+</sup>17, NC18, SB19, UZM<sup>+</sup>14, BM12]. **HeteroMPI** [VLO<sup>+</sup>08]. **Heuristic** [SG07]. **Heuristics** [CJ06]. **Hi** [TDM<sup>+</sup>17]. **Hi-C** [TDM<sup>+</sup>17]. **hierarchic** [EDB19]. **Hierarchical** [DD06, GJMS88, HJ96, HWP03, IGDQO19, PBAL09, SG09a, WT99, DSH<sup>+</sup>16, GBB18, MJD16, Wal18, ZBMK11]. **Hierarchy** [HL10, YK04]. **High** [Ano87d, Ano87f, Ano94a, Ano94c, Ano95b, Ano95a, Ano96a, Ano97b, Ano97c, Ano97a, Ano98b, Ano98a, Ano99, Ano00, Ano01b, ARR99, Aus92, Bai88, BV11, BGI<sup>+</sup>99, BCC<sup>+</sup>01, BAA<sup>+</sup>06, BEH<sup>+</sup>90, BEF<sup>+</sup>95, BRT<sup>+</sup>92, CWHP99, CC95, CDP<sup>+</sup>94, CSY10, CB95, CJK<sup>+</sup>05, DTD14, DFS<sup>+</sup>05, DGJ09, DBA<sup>+</sup>09, DHL16, ISD89, EKD<sup>+</sup>12, FGC<sup>+</sup>05, FGJ<sup>+</sup>04, GBB18, GHM<sup>+</sup>10, GHL15, GMWG10, GSK<sup>+</sup>15, HSLK11, IS96, IKY<sup>+</sup>10, KDH11, KBA00, Kep04a, KWB06, Kuc04, KMM16, LST15, LPB<sup>+</sup>16, LD07, MAB07, MSPSI15, NKiN<sup>+</sup>08, NFK98, NTKP06, PPK<sup>+</sup>04, PPK09, PA11, Poz97, Pra01, QWIC02, Sab91, STS17, SKB01, Ste01, Ste04, SKC10, TR17, THL88, TMW<sup>+</sup>99, THDC09, VRB<sup>+</sup>19, Wad99, WLC91, WLG<sup>+</sup>18, WOS08, YSP<sup>+</sup>05, AFGQO19, AGHR19, BAM<sup>+</sup>16, BLC17, BAP<sup>+</sup>12, CGW19, CZR<sup>+</sup>11, DVW<sup>+</sup>12, DAC<sup>+</sup>14, ECG<sup>+</sup>13, Fem90, GR17, Har11]. **high** [IYK16, IFA15, JRT16, LDLD19, LH19, MCU<sup>+</sup>13, OGM<sup>+</sup>16, PPC<sup>+</sup>16, PSV<sup>+</sup>16, PF16, SCKW19, TNLP13, Udd17, WDH<sup>+</sup>15,

WD19, Mar87a]. **High-Cost** [PPK09]. **High-End** [BV11, NKiN<sup>+</sup>08, PA11]. **high-intensity** [JRT16]. **High-Level** [BCC<sup>+</sup>01, GBB18, Udd17]. **High-Order** [CC95, LH19, OGM<sup>+</sup>16, SCKW19]. **High-Performance** [Bai88, BAA<sup>+</sup>06, BRT<sup>+</sup>92, CSY10, DGJ09, DBA<sup>+</sup>09, ISD89, HSLK11, IKY<sup>+</sup>10, KWB06, PPK<sup>+</sup>04, Sab91, TMW<sup>+</sup>99, THDC09, DTD14, DHL16, EKD<sup>+</sup>12, GHL15, GMWG10, GSK<sup>+</sup>15, KDH11, KMM16, LST15, LPB<sup>+</sup>16, SKC10, TR17, VRB<sup>+</sup>19, WLG<sup>+</sup>18, AFGQO19, BAP<sup>+</sup>12, CGW19, CZR<sup>+</sup>11, DAC<sup>+</sup>14, ECG<sup>+</sup>13, Fem90, GR17, Har11, IYK16, IFA15, PPC<sup>+</sup>16, PSV<sup>+</sup>16, PF16, TNLP13]. **High-Pressure** [WLC91]. **High-Resolution** [DFS<sup>+</sup>05]. **High-Speed** [Ano87d, BAM<sup>+</sup>16, Mar87a]. **High-Throughput** [GHM<sup>+</sup>10, AGHR19]. **High-Wave** [BEF<sup>+</sup>95]. **Higher** [Mah90]. **Highly** [BCC<sup>+</sup>06, Sim90, PS12]. **History** [MT89, ZC92, Bra91]. **Hitachi** [WOG95]. **HLA** [RTRG<sup>+</sup>07]. **Hoc** [IBC<sup>+</sup>10, TNBG07, BG02, CHZ02]. **HOMME** [CAE<sup>+</sup>13, DDKK19]. **homogeneous** [IMW<sup>+</sup>13]. **Homotopy** [DZRS99]. **Hop** [TNBG07]. **Hoshen** [CBV97]. **Hosted** [HBSM03]. **Hough** [GLGLB<sup>+</sup>11]. **hp** [KBY<sup>+</sup>19]. **hp-adaptive** [KBY<sup>+</sup>19]. **HPC** [Ano19, ABG<sup>+</sup>19, BBMB19, BBG<sup>+</sup>18, CRS<sup>+</sup>19, CCBL18, GCSK13, Kep04b, KV19, KHK<sup>+</sup>09, MDH<sup>+</sup>18, NMI<sup>+</sup>19, SSQ08, SGFC09]. **HPCC** [CBB<sup>+</sup>96]. **HPCG** [LYL<sup>+</sup>16]. **HPF** [BF01, DL97]. **HPF-Builder** [DL97]. **HPG** [IMB<sup>+</sup>19]. **HPVM** [CLP<sup>+</sup>99]. **HPVM-Based** [CLP<sup>+</sup>99]. **human** [ABH<sup>+</sup>18, BE17]. **Hybrid** [BBG<sup>+</sup>10, BBH<sup>+</sup>06, CWG09, MS02, RW03, BSK14, BBG<sup>+</sup>14, CAE<sup>+</sup>13, GHL15, GGO16, HTD<sup>+</sup>14, HLW<sup>+</sup>16, LYL<sup>+</sup>16, NOM<sup>+</sup>19, NMAE13, RMV<sup>+</sup>19, STP<sup>+</sup>13, SZC12, SDJ17, SMZ<sup>+</sup>18, SHK<sup>+</sup>18, THDS19, WSD<sup>+</sup>14]. **hybrid-core** [BBG<sup>+</sup>14]. **Hybridisation** [EMP<sup>+</sup>18]. **hydrodynamic** [HLH<sup>+</sup>19, SZC12]. **Hydrodynamics** [LRBS89, PGTS10, GEKO19]. **hydrostatic** [AWWG19]. **Hyperbolic** [FG97, CHT<sup>+</sup>19, LH19, RV15]. **Hypercube** [Din91, KLJ87]. **Hypercubes** [LK01]. **Hyperspectral** [DF08, HC08, PC08a, SPTT08, VLO<sup>+</sup>08].

**I-WAY** [DFP<sup>+</sup>96, GKN<sup>+</sup>96, NBB<sup>+</sup>96]. **I/O** [DLY<sup>+</sup>98, DEL<sup>+</sup>12, IBC<sup>+</sup>10, KKCB98, KES<sup>+</sup>17, LPJ98, MMD98, MS95, NFK98, OWO98, PH91, SW01, SR98, TLG98, TD08, WWA<sup>+</sup>11]. **IA** [PSV<sup>+</sup>16]. **IA-based** [PSV<sup>+</sup>16]. **IBM** [DEKV92, DD89, DD91, Gaf88, GNB11, KMH<sup>+</sup>14, MAB<sup>+</sup>13]. **Ice** [ZOF90]. **IceT** [GS99]. **idealized** [LPB<sup>+</sup>16]. **IDR** [AKP<sup>+</sup>18]. **IEH** [LK01]. **IESP** [GD09, Moh09]. **II** [Don02b, JP93, TDM<sup>+</sup>17]. **IJHPCA** [Mas19]. **ILU** [Ma00]. **Image** [AAC<sup>+</sup>97, BCJ01, CSY10, DIB00, DF08, PTGB02, Sal87, SPTT08, BGM15, TKA<sup>+</sup>17, THH<sup>+</sup>13, ZCZ<sup>+</sup>13]. **Imagery** [HC08, PC08a]. **Images** [VLO<sup>+</sup>08, RPB<sup>+</sup>19, SKS<sup>+</sup>13]. **Imaging** [CBB<sup>+</sup>96, Wri12, JKBW18, SFLC18]. **Immersive** [THC<sup>+</sup>96]. **Impact** [Ald89, BRU05, Chu99, GJMS88, LC90, NMAE13, BHK<sup>+</sup>88]. **Implementation** [AEPR92, BBS99, BCZM07, BBA87, BIC<sup>+</sup>10, BG00, BRM03, CL95, CLF87, Cho01, CTD<sup>+</sup>05, EKF<sup>+</sup>19, FD04, HJ96, IBC<sup>+</sup>10, KLJ87, LMT<sup>+</sup>12, LT90, MC90, MS02, MG87, MS05, NMI<sup>+</sup>19, ODD07, SYF96, Tis97, ZZG<sup>+</sup>14, dRADS<sup>+</sup>18a, BG11, GDS17, KTWL18, LNSMMA15, MHW15, NMAE13, OKTR11, OGM<sup>+</sup>16]. **Implementations** [Ano01a, RR96, BDFVP15, KWEF18, LWT<sup>+</sup>11]. **implemented** [BBDH14, PH19]. **Implementing** [CDT05, KV19, LRT07, YFH<sup>+</sup>96]. **Implications** [RES87]. **Implicit**



[GKMT00, MS02, EAG<sup>+</sup>19, KC18, AGC<sup>+</sup>19]. **Importance** [BCG<sup>+</sup>10, SC09]. **Important** [TC10]. **improve** [JdSA<sup>+</sup>17, LFB<sup>+</sup>15]. **Improved** [Ano87b, CMHB15, FSN08, NTD10, DMSMG18, INY<sup>+</sup>14]. **Improvement** [SVN09, KMM16]. **Improving** [ARPY19, BL99, BJK07, CGGC<sup>+</sup>16, DAB<sup>+</sup>12, JMC05, KL13, MJD16, MW12, YK04]. **in-depth** [JDAD19]. **in-memory** [WZHG17]. **in-situ** [MFB<sup>+</sup>19]. **Incomplete** [IJ93, Kal09b]. **Increased** [WBM90]. **Increasing** [PHC<sup>+</sup>10, WW92]. **Independent** [BRU05]. **Index** [Ano96b, Ano97d, Ano98b, Ano99, Ano00, Ano01b, Ano02n, Ano02l, Ano02m, HC08, BE07]. **Industrial** [DGP<sup>+</sup>97, GMWG10, LDGR03, JBOT19]. **inefficiency** [HGMW12]. **Inequality** [NK89]. **Inertial** [BGB<sup>+</sup>18]. **Infer** [RS03]. **inference** [KPST18]. **Infiniband** [SWHP05, NOM<sup>+</sup>19, OF17]. **Influence** [CK01, Ede93]. **Information** [Ano91b, Ano91a, Ano92g, Ano96c, Ano96a, Ano97b, Ano97c, Ano98a, BH06, CHZ02, FWSW02, FP02, IMS16]. **Information-Driven** [CHZ02]. **Information-Theoretic** [FWSW02]. **Infrastructure** [FK97, HLP<sup>+</sup>03, Wal03]. **Infrastructures** [HdV18]. **Initial** [WLVL<sup>+</sup>96]. **Initiated** [SSB<sup>+</sup>05]. **Initio** [ASW91, LDLD19]. **injection** [CIWI17, WSD<sup>+</sup>14]. **Innovative** [MPS15]. **input** [LCZ<sup>+</sup>15, WV1<sup>+</sup>16]. **input/output** [LCZ<sup>+</sup>15, WV1<sup>+</sup>16]. **inspired** [CGW19]. **Instance** [LJC<sup>+</sup>10]. **Instance-Intensive** [LJC<sup>+</sup>10]. **instances** [TR17]. **Institute** [Duk91, EM89, IHMM87]. **Instruction** [HRM89]. **Instrument** [CBB<sup>+</sup>04]. **Instrumentation** [TM99]. **Integer** [Gro03]. **Integrate** [BFL99]. **Integrated** [CFK<sup>+</sup>94, GLZS14, MHW15, WBG06, FT19]. **Integration** [ACD07, QWIC02, BTRZ<sup>+</sup>19]. **Integrative** [KHK<sup>+</sup>09]. **Intel** [GLZS14, HGD91, HLS<sup>+</sup>17, KLJ87, KR94, KR95, SB19]. **Intelligence** [Ano87d]. **Intel(R)** [MMDA19]. **intensity** [JRT16, LH19]. **Intensive** [GMLP08, KUE<sup>+</sup>00, LJC<sup>+</sup>10, Mah90, ACF<sup>+</sup>11, FKA<sup>+</sup>17]. **Inter** [FWZ91]. **Inter-Semiconductor** [FWZ91]. **Interacting** [KWB06]. **Interaction** [AEPR92, Liu90, KC18]. **Interactions** [TMWS91]. **Interactive** [CWHP99, CLF87, KPM<sup>+</sup>96, LSS93, RBMF87, RTRG<sup>+</sup>07, SS89, THC<sup>+</sup>96, VR00, WFB04]. **Interchange** [YK04]. **interconnect** [SDI<sup>+</sup>19]. **interest** [CdVL<sup>+</sup>18]. **Interface** [Ano93d, Ano94b, BDG<sup>+</sup>00, KFM<sup>+</sup>10, LWOB97, MPI98, SLG95, ESW<sup>+</sup>12, IMS16, ZKRA14, BC14, BBH<sup>+</sup>06, BRU05, Cot04, GL04, IBC<sup>+</sup>10, KKDV03, KKD05, LK10, SWHP05, TGT05]. **Interference** [KCC<sup>+</sup>06]. **Interference-Aware** [KCC<sup>+</sup>06]. **Interleaving** [KNP<sup>+</sup>87]. **International** [Ano91b, Ano92g, Ano92e, Ano92f, Ano93a, Ano94a, Ano95b, Ano95a, Ano96a, Ano97b, Ano97c, Ano97a, Ano98a, Gaf88, Lee03, Ano98b, Ano99, DBA<sup>+</sup>09, DBM<sup>+</sup>11, Ano91a, Ano00, Ano01b]. **Internet** [EDSV06, Rao02]. **Interoperability** [Kal09b, LDB<sup>+</sup>06, SIC<sup>+</sup>19, EKD<sup>+</sup>12]. **Interpolation** [JLO05, SBBS06]. **Interpretation** [Fei99]. **Intrepid** [BWB<sup>+</sup>10]. **Introduction** [Ano02o, BM13, BL18, DT99, DT13, Hau94, Mas19, Nag93, OV13, SB18, SDS12, Ste01, Tur95]. **Inverse** [Cho01]. **inversion** [BGM15]. **Investigating** [CW05]. **Investigation** [CK01]. **Investigations** [Mav02]. **investing** [DTL19]. **Invitation** [Mar87c]. **Invocation** [DP05]. **Involving** [MBF<sup>+</sup>11]. **IO** [BIC<sup>+</sup>10, LRT07]. **Ion** [Reu92]. **Iowa** [BCYS11]. **IPC** [Udd17]. **iPSC** [HGD91, KR94, KR95]. **iPsc/** [KR94]. **iPSC/860** [HGD91, KR95]. **Ireland** [MCS<sup>+</sup>06]. **Irregular** [Cza03, Man97, TRS<sup>+</sup>10, KPR17, MMHL11]. **ischaemic** [SKS<sup>+</sup>13]. **Ising**

[BMT89, BRT<sup>+</sup>92]. **island** [NC18]. **island-based** [NC18]. **isolating** [ALL13]. **Issue** [BV11, BM13, BE18, DT97, DT99, DT06, DT13, DT17, Fol90b, Hau94, MPI98, Mas19, ME14, Nag93, OV13, PA11, Yel04, BH17, DT19, HdV18, MFB<sup>+</sup>19, WD19, SDS12]. **issued** [CSGM17]. **Issues** [AD93, BMWD87, CLSS09, CEL<sup>+</sup>97, Dem90, EGMP93, Men00, GCSK13]. **Italy** [OL05]. **Iterated** [RR96]. **Iterative** [BDL<sup>+</sup>07, CSV91, CMN12, CM9, FFR<sup>+</sup>10, MC90, MCW<sup>+</sup>00, PHC<sup>+</sup>10, SC04b, SCFK04, AKP<sup>+</sup>18, CSGM17, CvG11].

**Jacobi** [BBDH14]. **Jaguar** [BWB<sup>+</sup>10]. **Jam** [MCG04]. **Japan** [EM89, IHMM87]. **Java** [BJK07]. **Jini** [Hua03]. **Jini-Based** [Hua03]. **JISGA** [Hua03]. **job** [GJMV18]. **Josephson** [IKY<sup>+</sup>10]. **Journal** [Ano91b, Ano91a, Ano92g, Ano92e, Ano92f, Ano93a, Ano94a, Ano95b, Ano95a, Ano96a, Ano97b, Ano97c, Ano97a, Ano98b, Ano98a, Ano99, Ano00, Ano01b]. **JPEG** [BKRSR09, CLBS17]. **JPL** [Din91]. **Jumpshot** [ZLGS99]. **Junctions** [IKY<sup>+</sup>10]. **Jupiter** [Tho90]. **Just** [BPBL11]. **Just-in-Time** [BPBL11].

**K-computer** [INY<sup>+</sup>14]. **Kepler** [HPW<sup>+</sup>16]. **Kernel** [TM99, ALL13, Jon12, LNSMMA15]. **Kernels** [BELF07, IYV04, MAB<sup>+</sup>13, WKLW19]. **key** [KV19, KES<sup>+</sup>17]. **keys** [BSK14]. **Kinetics** [ARR99]. **Knowledge** [AEG<sup>+</sup>03, Cap09, vLRA<sup>+</sup>03, ECG<sup>+</sup>13, KT94]. **Known** [Ano92h]. **Kokkos** [DWT<sup>+</sup>19]. **Kopelman** [CBV97]. **Krylov** [GKMT00, ATL<sup>+</sup>15, AKP<sup>+</sup>18, CMN12]. **Kutta** [KR11, RR96].

**L** [dSSB<sup>+</sup>08]. **LA-MPI** [YSP<sup>+</sup>05]. **Laboratory** [ABF<sup>+</sup>08, Bus87, BBB<sup>+</sup>91b, Don89, DGH<sup>+</sup>93, HGD91]. **Lagrange** [MT89]. **Lagrangian** [KRR19]. **LAM** [SSB<sup>+</sup>05]. **LAM/MPI** [SSB<sup>+</sup>05]. **Laminar** [EDS95, SG91]. **Land** [HVKW05]. **Language** [CCZ07, LD07, Pan92, Sha88, CH13, EKD<sup>+</sup>12, NMI<sup>+</sup>19]. **Languages** [Kal09b, KKS04, YHG<sup>+</sup>07, JO92]. **Large** [AS00, AK91, AGL<sup>+</sup>87, BAM<sup>+</sup>16, BGG05, BDP01, BCCL09, Ber92, BWB<sup>+</sup>10, BBA87, BCC<sup>+</sup>06, CWHP99, CK01, Ede93, Ewi88, Fra05, FBW<sup>+</sup>87, GDKWS15, GMWG10, Gun00, HSLK11, Joh01, KNP<sup>+</sup>87, KUE<sup>+</sup>00, LT88, LM03, LDW<sup>+</sup>12, LC06, MC90, MR04, MRD<sup>+</sup>15, Mor89b, NKR90, PPK<sup>+</sup>04, PS87, RGB<sup>+</sup>18, SE92, SD87, TRS<sup>+</sup>10, UF89, VS03, WT99, YRA<sup>+</sup>02, ZRÇ<sup>+</sup>06, ABH<sup>+</sup>18, BLOR18, BCYS11, CvG11, DCD<sup>+</sup>13, EEL15, FU12, HIT<sup>+</sup>14, JBOT19, MBHF15, MJD16, RDG12, STP<sup>+</sup>13, SIC<sup>+</sup>19, VOL<sup>+</sup>14, ZBMK11]. **Large-Scale** [AS00, AK91, BDP01, Ber92, BBA87, CWHP99, Ewi88, Fra05, Gun00, HSLK11, Joh01, KUE<sup>+</sup>00, LC06, Mor89b, NKR90, SD87, YRA<sup>+</sup>02, ZRÇ<sup>+</sup>06, BAM<sup>+</sup>16, GDKWS15, GMWG10, LM03, LDW<sup>+</sup>12, MRD<sup>+</sup>15, BLOR18, EEL15, JBOT19, MBHF15, MJD16, STP<sup>+</sup>13, SIC<sup>+</sup>19, VOL<sup>+</sup>14]. **Largest** [Ano92h]. **Largest-Known** [Ano92h]. **Latent** [WWA<sup>+</sup>11]. **Lattice** [BGK<sup>+</sup>90, Din91, JC12, LRBS89, Mor89a, MSK92, CGST19, Liu90, Mon12, OKTR11, RWM17, YTYD19, SBBS06]. **Law** [HE01]. **laws** [Hea15, LH19]. **Lax** [YFS<sup>+</sup>14]. **layout** [HLW<sup>+</sup>16, SZ11]. **layouts** [RWM17]. **Lazy** [BPBL11]. **LBLAS** [KJH96, JO92]. **Leading** [OCC<sup>+</sup>08, SSQ08]. **Learned** [PK04, IKMS<sup>+</sup>19]. **Learning** [AH93, AK93, CBM13, DMJS19, EEL15, EJD<sup>+</sup>19, KWEF18, MP18]. **Leasing** [EW06]. **Legacy** [Ano02h]. **Legion** [GNTLH97]. **Length** [DLY<sup>+</sup>98, BSK14]. **lesions** [SKS<sup>+</sup>13]. **Lessons** [PK04]. **Level** [BCC<sup>+</sup>01, BBC<sup>+</sup>00, YK04, DEL<sup>+</sup>12, GBB18, IK18, LRG<sup>+</sup>16, Udd17, DD89, DD91]. **Leveraging** [CH13, LYL<sup>+</sup>16, SFLC18].

**Liber8Tion** [Pla09]. **Libraries** [DMT01, GFD05, LDB<sup>+</sup>06, PBD<sup>+</sup>01, PMS<sup>+</sup>04, PH19]. **Library** [BK07, CE00, MA15, BLC17, DWT<sup>+</sup>19, DEL<sup>+</sup>12, JC12, Poz97]. **Ligature** [KBA00]. **Lightspeed** [PPK<sup>+</sup>04]. **lightweight** [GS18, SSU<sup>+</sup>12]. **like** [CSV91]. **limitations** [CGW19, SPHW18]. **Limited** [KR11, TWK87]. **Limits** [Amd88, THH<sup>+</sup>13]. **Linda** [Mat95, SSNM92]. **Line** [LWOB97]. **Linear** [AGL<sup>+</sup>87, BS88, BDL<sup>+</sup>07, CDQS04, CL95, CDP<sup>+</sup>94, Don02a, Don02b, Ede93, GJMS88, JO92, KVY<sup>+</sup>90, KJH96, MC90, Ma00, MA15, Man97, NZ93, PB19, Poz97, WT99, de 89, ATD17, CvG11, FTB13, Kum89, LRLG19, MBvdG13, RDG12, SPHW18]. **Link** [TLG98, PS87]. **LINPACK** [DL09]. **Linux** [ALL13, Ano01a, CK01, GSHL03, Jon12, LWL05, SG09a, YIN<sup>+</sup>11]. **Liquid** [DQFW90]. **Livermore** [WGI90]. **Living** [GHZ10]. **Load** [BG09, BFNV07, GS05, GLGLB<sup>+</sup>11, MYCR06, ZBMK11]. **Load-Balanced** [BFNV07]. **Loads** [DLG06]. **Local** [BRT<sup>+</sup>92, MYC92, PNFC16, JO92, KJH96]. **Local-Creutz** [BRT<sup>+</sup>92]. **Locality** [AKW19, BPBL11, PHC<sup>+</sup>10]. **Localization** [CYT<sup>+</sup>02, MJGL13]. **Localized** [WCE95]. **Logical** [Chu99, SR98]. **Long** [Gro03, HRM89]. **longest** [Ozs16]. **look** [BBD<sup>+</sup>17]. **Looking** [AK93]. **Loop** [IS96, YK04, WKLW19]. **Loops** [WGI90]. **Loss** [ZOF90]. **Lossless** [Arn07]. **lossy** [CCO<sup>+</sup>19, CDL<sup>+</sup>19, TDG<sup>+</sup>19]. **Low** [DF08, KR11]. **Low-Complexity** [DF08]. **Low-Storage** [KR11]. **Lu** [Tis97].

**Machine** [BR03, CC95, CSV91, CBV97, EEL15, IKMS<sup>+</sup>19, MC90, SS89, Wit92, ZK93, BAP<sup>+</sup>12, CBM13, DMJS19, EJD<sup>+</sup>19, KWEF18, MP18, SSU<sup>+</sup>12, BJ92, GKH<sup>+</sup>91, HZ91, KKDV03, KKD05, LK10, LPG88, Don87]. **machine-learning-based** [CBM13]. **Machines** [AH93, BBDR95, CDT05, CB95, HC10, HGWN14, Jea13, KS89]. **macromolecular** [DF18, MCR<sup>+</sup>17]. **made** [ASHH16]. **Madre** [SS10]. **Magma** [NTD10]. **magnetic** [JKBW18]. **Magnetically** [ACG<sup>+</sup>90]. **Magnetohydrodynamic** [ACG<sup>+</sup>90, FU12]. **mainstream** [BHK<sup>+</sup>13]. **Major** [GL09]. **makes** [SDI<sup>+</sup>19]. **Making** [BPBL11, Dee10, GWKN08, BHK<sup>+</sup>13, KT94]. **malleable** [BPR18]. **Man** [Wit92]. **Manage** [HBSP08, ESW<sup>+</sup>12]. **Management** [AF09, AD93, BPK<sup>+</sup>07, DD06, Dar00, HTSK90, MWM<sup>+</sup>08, MFK09, PK04, SE92, YB07]. **manager** [IK18]. **Managing** [Spr06, TGP19]. **Many** [GLZS14, TMWS91, AKC<sup>+</sup>19, BH12, LDLD19, LNSMMA15, MSPSI15, PSV<sup>+</sup>16, Udd17, VRB<sup>+</sup>19, VOL<sup>+</sup>14, YFS<sup>+</sup>14]. **Many-Body** [TMWS91]. **many-core** [AKC<sup>+</sup>19, BH12, LNSMMA15, MSPSI15, PSV<sup>+</sup>16, Udd17, VRB<sup>+</sup>19, VOL<sup>+</sup>14, YFS<sup>+</sup>14]. **many-nucleon** [LDLD19]. **manycore** [AGC<sup>+</sup>19, DJJ<sup>+</sup>19, HFV<sup>+</sup>12, LTPK17, MBC<sup>+</sup>18, SCD<sup>+</sup>19]. **manycores** [BH17]. **Mapping** [CDRV15, QH08, ASAK19, DCN17, GJMV18, Jea13, KPR17]. **Mappings** [PTGB02]. **Marenostrum** [RBL08]. **marine** [GEKO19]. **Market** [McN87, NK89, WPBB01]. **Market-Based** [WPBB01]. **Markets** [IJ93]. **Mass** [McN87]. **Massive** [GNB11, dSSB<sup>+</sup>08, CdVL<sup>+</sup>18]. **Massive-Scale** [GNB11]. **Massively** [BBDR95, CH94, CBW95, CB95, Dem90, DCLS19, HVWS09, HVSW09, HS93, HZ91, JL89, Jon92, LPJ98, MA15, MPG93, Mon89, NZ93, PK04, SBF90, SCB<sup>+</sup>95, SK92, TMW<sup>+</sup>99, AHB<sup>+</sup>16, BCLP17, GEKO19, KHS<sup>+</sup>19, KRR19, KDH18, NMAE13, RMV<sup>+</sup>19, SPHW18]. **match** [Ozs16]. **Matching** [ZC92, HFV<sup>+</sup>12]. **Materials** [EGG05, GKN<sup>+</sup>96, KVY<sup>+</sup>90, Nak99, WLC91, ZOF90, MPD<sup>+</sup>12]. **Mathematical** [Mon89]. **Mathematics** [Don89].

**MATLAB** [BK07, Lus09b, ZZG<sup>+</sup>14]. **Matrices** [KC92a, KC92b]. **Matrix** [AGL<sup>+</sup>87, Chu99, DL09, GG11, IYV04, MCG04, NKR90, DEKV92, GG14, GGO16, HDL<sup>+</sup>15, MSHPV18, SCR11, YIYD19, YLL<sup>+</sup>14]. **Matrix-vector** [GG11, GGO16, YLL<sup>+</sup>14]. **matter** [GHHS15]. **Maximization** [GLGLB<sup>+</sup>11]. **MCell** [CBSB01, CBB<sup>+</sup>04]. **MCHF** [SYF96]. **Means** [BRT<sup>+</sup>92]. **Measure** [BH06]. **Measurement** [MSMW07, FU12]. **Measuring** [FGJ<sup>+</sup>04, Har11, KKS04, SB04]. **mechanically** [MBvdG13]. **Mechanics** [HOPB92, Her88, Ytt97]. **Mechanism** [DZRS99]. **Media** [PGTS10]. **medical** [THH<sup>+</sup>13]. **Medicine** [SSNM92]. **Mediterranean** [CDG<sup>+</sup>14]. **Medium** [MHW15]. **Meetings** [Ano91c, Ano91d, Ano91e, Ano92i, Ano92j, Ano92k, Ano92l, Ano92m, Ano93b, Ano93c, Ano98c]. **Melting** [MWC<sup>+</sup>05]. **Member** [HTSK90]. **memetic** [NC18]. **memoization** [CGGC<sup>+</sup>16]. **Memoriam** [Mar91]. **memories** [TKSK88]. **Memory** [AH93, AD93, BFLL99, BMWD87, Bri10, BEF<sup>+</sup>95, CDT05, CWG09, CB95, FSS13, GJMS88, GSHL03, Gir02, HC10, HL10, HD05, JLL04, JMC05, MWAR<sup>+</sup>87, MCW<sup>+</sup>00, NPT<sup>+</sup>06, NTKP06, WT99, YRA<sup>+</sup>02, YK04, YIN<sup>+</sup>11, ZC92, BH12, CHT<sup>+</sup>19, DEKV92, DCN17, HTD<sup>+</sup>14, HGMW12, IK18, JO92, KDO16, LFB<sup>+</sup>15, LCZ<sup>+</sup>15, RMV<sup>+</sup>19, SPNB14, SB19, THDS19, Wal18, WZHG17, YIYD19, SS10]. **Memory-Aware** [SS10]. **memory-efficient** [RMV<sup>+</sup>19]. **merger** [HLH<sup>+</sup>19]. **Merging** [YBA<sup>+</sup>03]. **Mesh** [DFS<sup>+</sup>05, HT04b, Mav02, MCW<sup>+</sup>00, SR05, WCE95, WCDS99, DCLS19]. **Mesh-Iterative** [MCW<sup>+</sup>00]. **Meshes** [Ytt97, KC18]. **Meso** [GGS01]. **Meso-Scale** [GGS01]. **Message** [Ano93d, Ano94b, CWG09, MPI98, BBG<sup>+</sup>14, SMZ<sup>+</sup>18, ZKRA14, BC14, BBH<sup>+</sup>06, BRU05, Cot04, GL04, IBC<sup>+</sup>10, KKDV03, KKD05, LK10, SWHP05, SLG95, TGT05]. **Message-Passing** [Ano93d, Ano94b, CWG09, MPI98, SMZ<sup>+</sup>18, SLG95]. **Messages** [JW06]. **Messaging** [KFM<sup>+</sup>10]. **Metacomputing** [FK97, GS99]. **METADOCK** [ICPSG18]. **metaheuristic** [ICPSG18]. **Metaheuristics** [QH08, TPG<sup>+</sup>18]. **metal** [NMAE13]. **metal/polymer** [NMAE13]. **Metals** [Cla91]. **Metascheduling** [Mat03]. **Method** [DP05, FCLG07, Man97, SG91, Tis97, de 89, BBDH14, FIMU19, MMHL11, MMDA19, OKTR11, PH19, SPHW18, TKSK88, YB12, CKE08, SBBS06]. **Methods** [AD93, ACG<sup>+</sup>90, AGL<sup>+</sup>87, BMWD87, CC95, CSV91, FWSW02, HOPB92, HJ96, MC90, MG87, Meu88, MR90, PHC<sup>+</sup>10, RR96, SCFK04, TXD<sup>+</sup>07, THL88, CMN12, EKF<sup>+</sup>19, IYK16, ICPSG18, JdSA<sup>+</sup>17, Lai93, Mon12, SCKW19, UZM<sup>+</sup>14, Nag89]. **Metric** [HE01, DHL16]. **Metrics** [CMS<sup>+</sup>11, Num04, Ste04]. **Mexico** [Bus87]. **MHD** [ACG<sup>+</sup>90]. **MIC** [HLS<sup>+</sup>17, SHK<sup>+</sup>18]. **Micro** [BWB<sup>+</sup>10, SKS<sup>+</sup>13]. **Micro-benchmarks** [BWB<sup>+</sup>10]. **micro-ischaemic** [SKS<sup>+</sup>13]. **Microbenchmarks** [JLL04]. **Microcanonical** [BMT89]. **microfluidic** [KDH18]. **Microprocessors** [WT99]. **Microscopic** [YFH<sup>+</sup>96]. **microscopy** [RPdB<sup>+</sup>19, TKA<sup>+</sup>17]. **Microtasked** [MSK92]. **Microtasking** [HA91]. **microthreaded** [Udd17]. **MICs** [TKA<sup>+</sup>17]. **Middleware** [BA01, CKPD99, CDCV06, EDSV06, MCS<sup>+</sup>06]. **Migration** [KLJ87, UB95, QHCC17]. **millions** [LYL<sup>+</sup>16]. **MIMD** [AH93, BOD<sup>+</sup>91, FFNP97]. **Mimicking** [ACD07]. **Mini** [BGB<sup>+</sup>18, Gen88]. **Mini-applications** [BGB<sup>+</sup>18]. **Mini-Supercomputers** [Gen88]. **MiniApps** [MDH<sup>+</sup>18]. **minimal** [LBP18]. **Minimization** [Rao02, LPB<sup>+</sup>16]. **Minnesota** [Aus92, ATD<sup>+</sup>88]. **MiPax**

[HKK88]. **MIPSPro** [CW05]. **Missing** [Mar87d]. **Missions** [SKB01]. **Mixed** [Ano02b, BDL+07]. **MM** [MFP+17]. **MM2** [PUR94]. **Mobile** [FP02, QWIC02, YBA+03]. **Mode** [LRT07, HHSM19]. **Model** [ATN+00, ACD07, ABAS87, BFLL99, BE07, BFNV07, BG02, BMT89, BRT+92, CBW95, DVC88, GS05, GP93, Ish91, JLO05, Kep04a, KJ05, KM95, LR07, LPJ98, PPR03, SSSW91, SG09b, SG09a, SR05, Ste09a, TD08, VFD04, VC89, WBG06, WHL03, AGC+19, AWWG19, ABH+18, CDG+14, CMHB15, DAB+12, EDB19, EMP+18, EAG+19, GDKWS15, IYK16, KKL+19, LBP18, MKM+19, SDF+17, TNLP13, WDH+15, YWL+14, Cow08, CJK+05, DVW+12, DEE+12, DJC05, ESW+12, HVKW05, JLO05, KTWL18, LJO05, MS05, MW12, PLS05, WD05]. **Modeled** [WJS+90]. **Modeling** [AS00, AGHR19, BCZM07, BELF07, CWHP99, CC95, CTD+05, DR06, DDM87, DSD+91, DCN17, EGG05, EDS95, HVWS09, HVSW09, JO90, MOK00, MWC+05, Men00, MCU+13, Rad18, SG91, SVBP13, SK92, THC+96, THL88, WSCZ05, YK07, YW93, CVJ12, DCM+17, GSK+15, JKBW18, MMHL11, SE12, UCZ+15]. **modelling** [QHCC17, STS17]. **Models** [ARR99, BV11, BRGR11, BR03, BBD00, DGD+04, DFC90, Gir02, HD05, HAF+96, IJ93, Kal09b, LJO05, LR09, LRO10, MA89, PA11, PS87, RW03, Ste04, Ste09b, UB95, VDB04, WOS08, WW92, ZC92, de 89, BH17, DTDP14, DEL+12, EJD+19, HLS+17, KBY+19, MEK+19, MDH+18, SCD+19, VSHN14, WKLW19]. **Modern** [BDG+00, WET+19, ESW+12, SB19]. **Modified** [HB90]. **Modisazure** [ACF+11]. **modular** [AFGQO19]. **Module** [PLS05]. **Modulo** [Gro03]. **Molecular** [BYT91, CGB+94, CH94, CWG09, CSY10, DQFW90, DGD+04, DVC88, DFC90, KVVY+90, MP94, Nak99, NHG+96, AKC+19, AKW19, HXW+13, SDI+19]. **Monitor** [BH06, SSU+12]. **Monitoring** [LWOB97, MR04, PHB04, SC09, Spr06, VR00]. **Monte** [BEH+90, CH94, DFT+15, FSS13, LM03, LPB+16, MWAR+87, MB87, MFP+17, SABD13, SSSW91, SSR+14, VSS+13, ZK93]. **mortar** [LPB+16]. **Morton** [Wal18]. **MOSFET** [VSS+13]. **MOTEUR** [GMLP08]. **Motions** [DFC90]. **moulded** [WSD+14]. **movement** [PG18]. **Moveout** [LT90]. **MP** [AEPR92, Del93, DH96, Lai93, LT88, MYC92, MSK92, YW93]. **MP/416** [THL88]. **MPH** [HD05]. **MPI** [SLG95, Ano94b, Ano01a, BBG+10, BCG+10, BBS99, BBG+14, BF01, BBDH14, BBH+13, BIC+10, BHK+06, BBC+00, BRM03, Bri10, CBL10, DJJ+19, DLB07, DGB+14, FD04, FCLG07, FSC+11, GFD05, GVF+18, HC10, HGMW12, IMS16, KWEF18, KMH+14, LRG+16, LRT07, kLCCW07, MS02, MMDA19, OL05, OGM+16, RTRG+07, SCB14, SSB+05, SDJ17, SC04b, SIC+19, THDS19, YSP+05, ZKRA14, SZC12]. **MPI-2** [HGMW12]. **MPI-Based** [FSC+11]. **MPI-IO** [BIC+10, LRT07]. **MPI-OpenMP** [MS02]. **MPI/OpenACC** [OGM+16]. **MPI/OpenMP** [MMDA19]. **Mpi/Openmp/GPU** [SZC12]. **MPI2** [MPI98]. **MPLT** [GVF+18]. **MPICH** [BHK+06, Cot04, GL97, TRG05]. **MPICH-G2** [Cot04]. **MPICH-V** [BHK+06]. **MrBayes** [KPST18]. **MRI** [SKS+13]. **Much** [RAGW93]. **Multi** [BKRSR09, BH12, Bri10, KDH11, OKTR11, SSR+14, TNBG07, YK04, APD+15, BGM15, CAE+13, CZR+11, DAC+14, IKMS+19, IK18, KTWL18, KKL+19, KILL13, LDW+12, LVA+13, LNSMMA15, PSV+16, TKA+17, VSS+13, VOL+14, YFS+14]. **multi-** [PSV+16]. **Multi-Core** [Bri10, BH12, KDH11, SSR+14, CAE+13, KILL13, LDW+12, LNSMMA15, TKA+17, VOL+14, YFS+14]. **Multi-Criteria** [BKRSR09]. **multi-GPGPUs** [APD+15].

**Multi-GPU**[OKTR11, BGM15, KTWL18, KKL<sup>+</sup>19].**Multi-Hop** [TNBG07]. **Multi-Level**[YK04]. **multi-order** [CZR<sup>+</sup>11].**multi-physics** [DAC<sup>+</sup>14]. **multi-processor**[BGM15]. **multi-scale** [IKMS<sup>+</sup>19].**multi-subband** [VSS<sup>+</sup>13]. **multi-tasking**[IK18]. **multi-threaded** [LVA<sup>+</sup>13].**Multiblock** [KDL01, Ytt97]. **Multibody**[BGI<sup>+</sup>99]. **Multicommodity** [NK89].**Multicomponent** [HD05, SVN09].**Multicomputer** [Man97].**Multicomputers** [MOK00]. **Multicore**[CWG09, BSK14, BSH<sup>+</sup>16, DTD14,DDKK19, LWT<sup>+</sup>11, MPD<sup>+</sup>12, MBC<sup>+</sup>18,OPW<sup>+</sup>12, THH<sup>+</sup>13]. **multicores** [BH17].**Multicriteria** [CJ06]. **Multidimensional**[HLW00]. **Multidisciplinary**[BGB<sup>+</sup>96, KDO16]. **Multidomain** [KS05].**Multifrontal** [AD89, AD93, BMW87].**Multigrid** [DMT97, SC04a, AG18,GEKO19, HRW19, ZZG<sup>+</sup>14]. **Multilevel**

[DW97, EGG05, WCD99, Sta19].

**Multimodal** [FWSW02]. **Multiparadigm**[AS00]. **Multiphase** [ZC92, FIMU19].**Multiphysics** [KMW<sup>+</sup>13, LJO05,MCW<sup>+</sup>00, MWC<sup>+</sup>05, PK04]. **Multiple**

[DLG06, MYCR06, Mor89b, Nak99,

BLOR18, BDFVP15, HGWN14, KDO16,

MDH<sup>+</sup>18, RDG12, SKS<sup>+</sup>13].**multiplication** [GGO16, SCR11, YLL<sup>+</sup>14].**Multiply** [GG11]. **Multipole**

[CKE08, KMPJ08, IYK16, YB12].

**Multiprocessing** [Ano87a, DD91, YM91].**Multiprocessor**

[AD89, BS88, DEKV92, KPR17].

**Multiprocessors**

[AD93, DD91, Gir02, Wad99].

**Multiprogramming** [MA89].**Multiprotocol** [BHK<sup>+</sup>06]. **Multistage**[GMWG10]. **Multitasking**[MYC92, THL88, UF89]. **multithreaded**[HFV<sup>+</sup>12]. **Multithreading** [BBG<sup>+</sup>10].**Multiunit** [GCL93]. **muscle** [IKMS<sup>+</sup>19].**Musings** [Luc09]. **Myth** [Ano87c].**NAMD** [NHG<sup>+</sup>96]. **Nankai** [BAM<sup>+</sup>16].**nanometre** [CHW<sup>+</sup>15]. **Nanophase**[Nak99]. **NAS** [BBB<sup>+</sup>91a]. **NASA**[MAB07, PLS05]. **National** [ABF<sup>+</sup>08,BBB<sup>+</sup>91b, Bus87, Don89, DGH<sup>+</sup>93, HGD91,

UB95, BEW16, All88, Blo87, Mir90, Web91].

**Navier** [Mav02, SBF90]. **nCube** [CL95].**Near** [Arn07]. **Near-Lossless** [Arn07].**nearest** [DSH<sup>+</sup>16]. **NEC** [Mor89a]. **Neck**[GKB93]. **Need** [GS09, Ste09a]. **Needs**[Ano87e, HBSM03]. **neighbour** [DSH<sup>+</sup>16].**Nek5000** [MGS<sup>+</sup>15]. **NEMO** [EMP<sup>+</sup>18].**NERSC** [HBSM03]. **NES** [AMC<sup>+</sup>18]. **Net**[AEG<sup>+</sup>03]. **Netlets** [Rao02]. **NetSolve**[CD97]. **Network** [ACD07, AM00, AB01,AMC<sup>+</sup>18, BL99, BSCC03, BGF02, CD06,

CD97, CK01, Chu99, DD06, DFMD94,

LC06, MOK00, NZ93, PHB04, RS03,

WEPB12, ABH<sup>+</sup>18, OF17, VEMR17].**Network-Based** [AM00].**Network-Enabled** [CD97, DD06].**network-on-chip** [VEMR17].**Network-theoretic** [WEPB12].**Networked** [FWSW02]. **Networking**[Ano87e]. **Networks**

[AKP08, CHZ02, FP02, Gum00, JMP02,

Mar89a, MAJJS03, QWIC02, RES87,

TNBG07, VLO<sup>+</sup>08, VRB<sup>+</sup>19]. **Neural**[AM00, Her88, RES87, VRB<sup>+</sup>19].**neuroimaging** [MRD<sup>+</sup>15]. **neutron**[BSH<sup>+</sup>16, DFT<sup>+</sup>15, SSR<sup>+</sup>14]. **Newton**[GKMT00]. **Next**[DE03, HT04a, MFB<sup>+</sup>19, ZKRA14].**next-generation** [MFB<sup>+</sup>19, ZKRA14].**NMR** [BHK<sup>+</sup>88]. **No** [Ano87c]. **Nodal**[FSN08]. **Node** [KHP<sup>+</sup>04, IK18, KL13].**node-level** [IK18]. **nodes** [TNLP13]. **NOE**[CGB<sup>+</sup>94]. **NOE-Restrained** [CGB<sup>+</sup>94].**noise** [ALL13, WLFH16]. **Non**[BCG<sup>+</sup>10, CAK<sup>+</sup>07, GSHL03, uITH07,AWWG19, RDG12, SLL<sup>+</sup>19].**Non-Data-Communication** [BCG<sup>+</sup>10].

**Non-Dedicated** [CAK<sup>+</sup>07, GSHL03].  
**non-deterministic** [SLL<sup>+</sup>19].  
**non-Hermitian** [RDG12].  
**non-hydrostatic** [AWWG19].  
**Non-Polynomial** [uITH07]. **nonblocking** [DJJ<sup>+</sup>19, WLFH16]. **nondeterminism** [CRS<sup>+</sup>19]. **Nonequilibrium** [YW93].  
**nonhydrostatic** [AGC<sup>+</sup>19]. **noniterative** [IMB<sup>+</sup>19]. **Nonlinear** [AK91, ABAS87, HT04b, KVY<sup>+</sup>90, GEKO19, JRT16].  
**Nonsymmetric** [KC92a, KC92b, MC90, Ma00]. **Normal** [YRA<sup>+</sup>02, Haj93]. **North** [LC90].  
**Northern** [UB95]. **Note** [DT17, DT18, DT19, WD18, WD19]. **Notice** [Ano17a]. **Novel** [CGB<sup>+</sup>94, DGJ09, FWZ91, SG07, HTD<sup>+</sup>14, PNFC16]. **Novo** [NKiN<sup>+</sup>08]. **NSF** [Bra91, Sci92, Sal87].  
**NSF-Sponsored** [Sal87]. **NT** [Ano01a, CLP<sup>+</sup>99]. **NuChart** [TDM<sup>+</sup>17].  
**NuChart-II** [TDM<sup>+</sup>17]. **Nuclear** [FSS13, IHMM87, LDLD19]. **nucleon** [LDLD19]. **NUMA** [Jea13, MKM<sup>+</sup>19, OPW<sup>+</sup>12]. **Number** [Ano92h, FG97, FU12]. **Numbers** [BEF<sup>+</sup>95]. **Numerical** [ABF<sup>+</sup>99, ABB<sup>+</sup>94, DMT01, DE03, Ede93, IJ93, LWL05, Nag89, PR95, PPR03, PBD<sup>+</sup>01, Poz97, RAB<sup>+</sup>15, RIF01, RKKC90, SG91, THDC09, BSS15, MAB<sup>+</sup>13, MKM<sup>+</sup>19, SDF<sup>+</sup>17].  
**Numerically** [Mah90, WJS<sup>+</sup>90].  
**NWChem** [JDD18].

**O** [DLY<sup>+</sup>98, DEL<sup>+</sup>12, IBC<sup>+</sup>10, KKCB98, KES<sup>+</sup>17, LPJ98, MMD98, MS95, NFK98, OWO98, PH91, SW01, SR98, TLG98, TD08, WWA<sup>+</sup>11]. **Oak** [ABF<sup>+</sup>08, DGH<sup>+</sup>93, HGD91]. **Object** [NHG<sup>+</sup>96, SE12]. **Object-Oriented** [NHG<sup>+</sup>96]. **Objective** [PPK09]. **oblivious** [CHT<sup>+</sup>19]. **observable** [RAB<sup>+</sup>15]. **observations** [ZKRA14]. **obstacle** [CCBS11]. **Obstacles** [MBF<sup>+</sup>11]. **Occupancy** [GLGLB<sup>+</sup>11]. **Ocean** [Cow08, HAF<sup>+</sup>96, JO90, KJ05, KM95, WSCZ05, CDG<sup>+</sup>14, EMP<sup>+</sup>18].

**oceanographic** [CBA<sup>+</sup>18]. **October** [OL05]. **ODE** [BCCL09, BH99, KR11]. **Off** [SR05]. **Offers** [Ano87a]. **offline** [dRADS<sup>+</sup>18a]. **Offload** [BRU05]. **Offloading** [GWKN08]. **Ohio** [BBW90]. **Oil** [KR94, KR95]. **On-Board** [SPTT08]. **on-Demand** [EW06]. **On-Line** [LWOB97]. **On-the-fly** [GSA<sup>+</sup>19]. **One** [GFD05, LRT07, TGT05, Udd17]. **One-IPC** [Udd17]. **One-Sided** [GFD05, LRT07, TGT05]. **Ongoing** [MEK<sup>+</sup>19]. **Online** [LC06]. **Onto** [QH08]. **Open** [LWOB97, BSW<sup>+</sup>14, CGW19, GCSK13, AEG<sup>+</sup>03]. **OpenACC** [MGS<sup>+</sup>15, OGM<sup>+</sup>16, QHCC17]. **OpenCL** [ASAK19, CLBS17, RGB<sup>+</sup>18]. **OpenDDA** [DGJ09]. **Opening** [PRT90]. **OpenMOC** [BSH<sup>+</sup>16]. **Openmp** [SZC12, BF01, BBDH14, BBC<sup>+</sup>00, HHSM19, LRLG19, MS02, MMDA19, OPW<sup>+</sup>12, THDS19]. **OpenMP-parallel** [HHSM19]. **Operating** [CW01, EDSV06, HI12, HI13, IH15]. **Operation** [BBR10, BHdR09]. **operational** [CBA<sup>+</sup>18]. **Operations** [FCLG07, GFD05, MS09, TRG05, TGT05, GG14, KMH<sup>+</sup>14, SCKW19]. **Operators** [FSN08, GRC08, ZM07, LMT<sup>+</sup>12]. **Opportunities** [Ano87a, Cap09, KMW<sup>+</sup>13]. **optical** [GSK<sup>+</sup>15]. **Optimal** [BR03, FG97, LTPK17]. **Optimisation** [BGB<sup>+</sup>18, VSS<sup>+</sup>13]. **Optimization** [AKP<sup>+</sup>18, ABB<sup>+</sup>94, BFLL99, BGB<sup>+</sup>96, BELF07, CGST19, HL10, HA91, IYV04, KMH<sup>+</sup>14, LT88, PPK09, RW03, SCD<sup>+</sup>19, SCB<sup>+</sup>95, SR05, TXD<sup>+</sup>07, TRG05, YLL<sup>+</sup>14, ABH<sup>+</sup>18, BRGR11, BH12, FIMU19, IMW<sup>+</sup>13, KES<sup>+</sup>17, NMAE13, SDJ17, SHK<sup>+</sup>18, UZM<sup>+</sup>14, YWL<sup>+</sup>14]. **Optimizations** [PSV<sup>+</sup>16, DCD<sup>+</sup>13, Jea13, PUR94, WKLW19]. **Optimize** [KKCB98, GVF<sup>+</sup>18]. **Optimized** [MSK92, THDS19, IK18]. **Optimizing**

[AKC<sup>+</sup>19, DDKK19, FSS13, GG11, KILL13, MAB<sup>+</sup>13, MCG04, Mor89a, TGT05, WCE95, WCDS99, EJD<sup>+</sup>19]. **Optorsim** [BCM<sup>+</sup>03]. **Order** [CC95, uITH07, THL88, CZR<sup>+</sup>11, LH19, OGM<sup>+</sup>16, SCKW19, THDS19]. **ordering** [Wal18]. **orderings** [AKW19]. **ordinates** [DMSMG18]. **Organic** [CBL06]. **Organization** [FWSW02, FKT01]. **Organized** [BGF02]. **Organizing** [CBL06, GHZ10]. **Oriented** [Hua03, NHG<sup>+</sup>96, CMN12]. **Orography** [GS05]. **oscillatory** [SPHW18]. **OSWALD** [RGB<sup>+</sup>18]. **other** [CBA<sup>+</sup>18]. **Our** [WW92]. **outlooks** [RAB<sup>+</sup>15]. **output** [LCZ<sup>+</sup>15, WVL<sup>+</sup>16]. **Overarching** [Kep04b]. **Overhead** [MSMW07]. **Overheads** [BCG<sup>+</sup>10, GNB11]. **Overlap** [BBDR95, BRU05, INY<sup>+</sup>14]. **Overlapping** [PR95, DJJ<sup>+</sup>19]. **overset** [KBY<sup>+</sup>19]. **Overview** [AGR<sup>+</sup>03, DFP<sup>+</sup>96, DJC05].

**P** [MAB<sup>+</sup>13, GNB11, SSU<sup>+</sup>12]. **P4** [Mat95]. **PACE** [NKP<sup>+</sup>00]. **Pacific** [JO90]. **Package** [RIF01, SYF96]. **Pair** [Fro91]. **PAM** [CEL<sup>+</sup>97]. **PAM-CRASH** [CEL<sup>+</sup>97]. **Panel** [Sal87]. **PANORAMA** [DCM<sup>+</sup>17]. **Papers** [Lee03, Moh09, OL05, DT11, KKDV03]. **PAPI** [JDAD19]. **papillomavirus** [ABH<sup>+</sup>18]. **Par-BF** [LGDH16]. **Paradigm** [BGB<sup>+</sup>96, DCL<sup>+</sup>08]. **Parallel** [AWS01, AAC<sup>+</sup>97, AS00, APD<sup>+</sup>15, AK91, AM00, AHB<sup>+</sup>16, AEPR92, ABB<sup>+</sup>94, BGG05, BDP01, BCCL09, BBB<sup>+</sup>91a, BCZM07, BOD<sup>+</sup>91, BYCB05, BK07, BBDR95, BBC<sup>+</sup>00, BSH<sup>+</sup>16, BG00, BEF<sup>+</sup>95, BGB<sup>+</sup>96, BH99, CCH<sup>+</sup>88, CCZ07, CE00, CDH<sup>+</sup>93, CL95, CCBS11, CH94, CBW95, Cho01, CSV91, Chu99, CEL<sup>+</sup>97, CB95, CM97, CJK<sup>+</sup>05, DEKV92, DLY<sup>+</sup>98, Dem90, DIB00, DFS<sup>+</sup>05, DZRS99, DMT01, DZDR95, Ede93, EGG05, EDS95, FG97, Gaf88, GCCC<sup>+</sup>03, GKN<sup>+</sup>96, GKP97, GDS17, GP93, GGS01, GL97, GKMT00, HKK88, HVWS09, HVSW09, HR97, HdV18, HLW00, HJ96, HT04b, HS93, HZ91, IBC<sup>+</sup>10, JLO05, JL89, Jon92, KDL01, KC92a, KC92b, KT99, Kok88, KR11, KS05, LJO05, LPJ98, LWOB97, Lus09b, MC90, MS09, MMD98, MA15, MS02, MSMW07, MT89, MWAR<sup>+</sup>87, MPG93, Mat95, Mav02, MD99, MWC<sup>+</sup>05, McR87]. **Parallel** [Meu88, MBF<sup>+</sup>11, Mon89, Mor89b, MSK92, MS95, NK89, NKR90, NKiN<sup>+</sup>08, NHG<sup>+</sup>96, NZ93, NFK98, NKP<sup>+</sup>00, OWO98, ODD07, Pan92, Pan97, PR95, PPR03, PC08a, PK04, RW03, RR96, RS03, SBF90, SWW94, SABD13, SW01, SS89, SPTT08, Sha88, SCB<sup>+</sup>95, SM06, SR98, Sim90, SSNM92, SG91, SK92, SBG10, SMW87, TBA<sup>+</sup>17, TLG98, TMW<sup>+</sup>99, TR92, Tis97, TD08, UB95, VLO<sup>+</sup>08, VSHN14, WSCZ05, WG07, YRA<sup>+</sup>02, YHG<sup>+</sup>07, YW93, Ytt97, ZK93, ZCZ<sup>+</sup>13, AKW19, dRADS<sup>+</sup>18a, dRADS<sup>+</sup>18b, BLC17, BH12, BCLP17, CSC19, CMHB15, DKMT18, DAB<sup>+</sup>12, DEL<sup>+</sup>12, DCLS19, EJD<sup>+</sup>19, GBB18, GHL15, GHHS15, HLW<sup>+</sup>16, HLS<sup>+</sup>17, HHSM19, IMH<sup>+</sup>11, IMH<sup>+</sup>12, ICPSG18, IKMS<sup>+</sup>19, JdSA<sup>+</sup>17, KT94, KHS<sup>+</sup>19, KRR19, KES<sup>+</sup>17, KDH18, Kum89, LPG88, LGDH16, LWT<sup>+</sup>11, LBP18, MFB<sup>+</sup>19, MJD16, MS19, NMAE13, PH19, RMV<sup>+</sup>19, SPHW18, Sta19]. **parallel** [SMZ<sup>+</sup>18, SB19, TRS13, TPG<sup>+</sup>18, THDS19, WVL<sup>+</sup>16, WEPB12, DP05, KJ05, KKDV03, KKD05, LK10, Nag89]. **Parallel-algorithm** [AHB<sup>+</sup>16]. **parallelisation** [BSW<sup>+</sup>14, VSS<sup>+</sup>13, WSD<sup>+</sup>14]. **Parallelism** [ACM88, CFK<sup>+</sup>94, MYC92, VRRL18, dSSB<sup>+</sup>08, DMSMG18, Jon12, KDNE18]. **Parallelization** [AJL<sup>+</sup>97, CBV97, Cow08, Cza03, DGP<sup>+</sup>97, GCD97, HE01, KM95, LP10, LVA<sup>+</sup>13, MCW<sup>+</sup>00, Reu92, WBG06, CIWI17, CDG<sup>+</sup>14, MFP<sup>+</sup>17, MMDA19, Ozs16, SZC12]. **Parallelizing** [AFL<sup>+</sup>18]. **Parameter** [FBBC03, SH93]. **Parameterizations** [WD05]. **Parameters** [LR09]. **ParaScope** [CCH<sup>+</sup>88]. **PARCOACH** [SCB14]. **Park** [UB95].



**Parkbench** [HL00]. **Parmetis** [LDGR03]. **Part** [HVWS09, HVSW09, SR05]. **Partial** [Key09, Meu88, RMS<sup>+</sup>18, KS89, YZC<sup>+</sup>15]. **Participate** [Mar87c]. **Particle** [DR06, DDM87, MB87, MD99, MR90, PGTS10, ABH<sup>+</sup>18, WET<sup>+</sup>19]. **particle-in-cell** [WET<sup>+</sup>19]. **Partition** [LQJG16]. **Partitioned** [MHW15, SBG10, ABD<sup>+</sup>18, ABG<sup>+</sup>19, LGDH16]. **Partitioner** [SR05]. **Partitioner-Centric** [SR05]. **Partitioning** [LR07, SR05, WCDS99, Ytt97, SABD13]. **Partitions** [WCE95]. **Passing** [Ano93d, Ano94b, BC14, BBH<sup>+</sup>06, BRU05, CWG09, Cot04, GL04, IBC<sup>+</sup>10, KKDV03, KKD05, LK10, MPI98, SWHP05, TGT05, SMZ<sup>+</sup>18, ZKRA14, SLG95]. **PASSION** [KKCB98]. **Passive** [MBF<sup>+</sup>11]. **Patching** [BH00]. **Path** [Luc09, SDJ17]. **Paths** [Rao02]. **patients** [SKS<sup>+</sup>13]. **Pattern** [BE07, APD<sup>+</sup>15, SKS<sup>+</sup>13]. **Patterns** [Cho01, GRC08, GKB93, SR98, dRADS<sup>+</sup>18b, BRR17, DKMT18, EEL15, HGMW12, WEPB12]. **Patterns/Operators** [GRC08]. **PC** [CDT05, CK01, LWL05, Ste01]. **PCs** [AWS01]. **PDE** [CCO<sup>+</sup>19, CHT<sup>+</sup>19]. **PDEs** [Ma00]. **Peaks** [TC10]. **PERFECT** [BCK<sup>+</sup>89]. **Performance** [AS00, ATN<sup>+</sup>00, Ano87b, Ano87f, Ano94a, Ano94c, Ano95b, Ano95a, Ano96a, Ano97b, Ano97c, Ano97a, Ano98b, Ano98a, Ano99, Ano00, Ano01a, Ano01b, ARR99, Aus92, Bai88, BGI<sup>+</sup>99, Bar09, BAA<sup>+</sup>06, BCK<sup>+</sup>89, BBDH14, BWB<sup>+</sup>10, BGB<sup>+</sup>18, BBA87, BFNV07, BRM03, BRT<sup>+</sup>92, BBD00, BDG<sup>+</sup>00, BELF07, CDQS04, CWHP99, CC95, CK01, CDP<sup>+</sup>94, CAK<sup>+</sup>07, CSY10, CEL<sup>+</sup>97, CB95, CJK<sup>+</sup>05, Dar00, Del93, DH96, DGD<sup>+</sup>04, DGJ09, DBA<sup>+</sup>09, ISD89, EAG<sup>+</sup>19, FGC<sup>+</sup>05, FGJ<sup>+</sup>04, FSC<sup>+</sup>11, FSN08, FFR<sup>+</sup>10, FU12, Gun00, HIT<sup>+</sup>14, HVWS09, HVSW09, HR97, HL00, HLW00, HSLK11, IS96, IKY<sup>+</sup>10, IHMM87, JLL04, JMC05, KBA00, Kep04a, KHP<sup>+</sup>04, KJ05, KDL01, KWB06, KS09a, Kuc04, KUE<sup>+</sup>00, LR07, LR09, LS90, LRLG19, LWL05, LD07, MSMW07, Mav02, MA89, Men00, MJ04, MMN09, MSK92, NFK98, NPT<sup>+</sup>06, NTKP06]. **Performance** [NKP<sup>+</sup>00, Num04, OCC<sup>+</sup>08, PPK<sup>+</sup>04, PB19, PF16, Poz97, PLS05, QHCC17, QWIC02, RIF01, RBL08, SBF90, Sab91, SWHP05, SSQ08, SCB<sup>+</sup>95, SM06, SVN09, SC09, Spr06, SKB01, Ste01, Ste04, SBG10, SFP02, SBBS06, SW04, SB19, THC<sup>+</sup>96, TMW<sup>+</sup>99, TAR<sup>+</sup>08, THDC09, VC89, VR00, VDB04, Wad99, WT99, WBF04, WG07, WD05, Yel04, YK04, YIN<sup>+</sup>11, YSP<sup>+</sup>05, ZLGS99, AKC<sup>+</sup>19, ATD17, AKP<sup>+</sup>18, AFGQO19, BLC17, BRGR11, BSH<sup>+</sup>16, BAP<sup>+</sup>12, CGGC<sup>+</sup>16, CGW19, CS14, CZR<sup>+</sup>11, CMHB15, DTDP14, DCM<sup>+</sup>17, DWT<sup>+</sup>19, DVW<sup>+</sup>12, DHL16, DAC<sup>+</sup>14, ECG<sup>+</sup>13, EKF<sup>+</sup>19, EKD<sup>+</sup>12, Fem90, GVF<sup>+</sup>18, GHL15, GR17, GMWG10, GS18, GSK<sup>+</sup>15, GGO16, Har11, HLW<sup>+</sup>16, IYK16, IFA15, JKD<sup>+</sup>11, JDAD19, KDH11, KL13, KMM16, LDLD19, LST15, LPB<sup>+</sup>16, LWT<sup>+</sup>11, MAB<sup>+</sup>13, MSPSI15, MCU<sup>+</sup>13, MW12, NMAE13, PPC<sup>+</sup>16, PSV<sup>+</sup>16, SFLC18, SSR<sup>+</sup>14, SZ11, STS17]. **performance** [SKC10, TR17, TGP19, TKA<sup>+</sup>17, TNLP13, UCZ<sup>+</sup>15, VRB<sup>+</sup>19, WLG<sup>+</sup>18, WKLW19, WLFH16, WD19]. **Periodic** [ZBMK11]. **PERMAS** [AJL<sup>+</sup>97]. **persistent** [KV19]. **Perspective** [Bar09, YHG<sup>+</sup>07, PS12]. **Perspectives** [Ano92n, MP95, Sab91]. **perturbative** [MFP<sup>+</sup>17]. **Pervasive** [Ald89]. **petaflop** [RWM17]. **petaflops** [TAM<sup>+</sup>16]. **Petascale** [Cap09, Her09, HXW<sup>+</sup>13, WWA<sup>+</sup>11, JKD<sup>+</sup>11, MKM<sup>+</sup>19]. **Petascale/Exascale** [Cap09]. **PEZY** [YIME19]. **PEZY-SC** [YIME19]. **PGAS** [GDKWS15, NMI<sup>+</sup>19]. **pH** [MP94]. **Phase** [CBL10, CDH<sup>+</sup>93, FWZ91, HSLK11, YCHH90, CRS<sup>+</sup>19, KDH18, RPB<sup>+</sup>19, VSHN14]. **phase-contrast** [RPB<sup>+</sup>19]. **phase-field** [VSHN14]. **PHAT** [MJGL13]. **Phi<sup>TM</sup>** [MMDA19]. **Photon** [MWAR<sup>+</sup>87].

**phylogenetic** [KPST18]. **Physical** [Chu99, SR98, WD05]. **Physical/Logical** [Chu99]. **Physician** [Wit92]. **Physics** [DSD<sup>+</sup>91, KDH11, MR90, DAC<sup>+</sup>14, GHHS15]. **Pieces** [Mar87d]. **Pipeline** [BFLL99, BKRSR09]. **Pipelined** [TRS<sup>+</sup>10]. **pipelining** [LQJG16]. **Pittsburgh** [RS88]. **pivoting** [YZC<sup>+</sup>15]. **Pixel** [HC08]. **placement** [DJJ<sup>+</sup>19]. **Planet** [Mar89b]. **Planning** [CDCV06]. **Plasma** [CDD<sup>+</sup>90, FU12]. **Plasmas** [ACG<sup>+</sup>90, DDM87, WET<sup>+</sup>19]. **plastic** [WSD<sup>+</sup>14]. **plate** [NMAE13]. **Platform** [LJC<sup>+</sup>10, PMS<sup>+</sup>04, PLS05]. **Platform-Adapted** [PMS<sup>+</sup>04]. **Platforms** [BLRR01, BMR06, Eyr06, MYCR06, OCC<sup>+</sup>08, dRADS<sup>+</sup>18a, ABG<sup>+</sup>19, BBG<sup>+</sup>18, BSH<sup>+</sup>16, DDKK19, IYK16, IMW<sup>+</sup>13, MPD<sup>+</sup>12, MFB<sup>+</sup>19, MFP<sup>+</sup>17, PPC<sup>+</sup>16, SHK<sup>+</sup>18, SB19, UZM<sup>+</sup>14, Ano19]. **Play** [Pan97]. **PLW** [LD07]. **pMATLAB** [BK07]. **POEMS** [BBD00]. **Point** [BSBF89, HC10, Ma00, CDL<sup>+</sup>19, LH18]. **Point-SSOR** [Ma00]. **Point-to-Point** [HC10]. **Pointers** [LRT07]. **points** [CdVL<sup>+</sup>18]. **Poisson** [GGS01, KRR19]. **policies** [BLOR18]. **Policy** [EW06]. **Pollution** [DFH<sup>+</sup>96]. **Polyacetylene** [ZOF90]. **Polyenes** [AEPR92]. **polymer** [NMAE13]. **Polymers** [DFC90]. **Polynomial** [uITH07]. **Polytetrafluoro** [DVC88]. **Porous** [PGTS10, MPD<sup>+</sup>12]. **Portability** [WD05, DWT<sup>+</sup>19, GS18, QHCC17, TGP19]. **Portable** [BDG<sup>+</sup>00, FCLG07, GL97, PLS05, EKF<sup>+</sup>19, HLH<sup>+</sup>19, SB19]. **Portals** [BRM03]. **Porting** [MCR<sup>+</sup>17, Mic09, SHK<sup>+</sup>18, WD19]. **pose** [BE17]. **Positive** [Ald89]. **Post** [BBH<sup>+</sup>13]. **Post-failure** [BBH<sup>+</sup>13]. **Potential** [CGW19]. **Potentials** [DGD<sup>+</sup>04, THDS19]. **Power** [BHdR09, Dem90, TNBG07, CGGC<sup>+</sup>16, PPC<sup>+</sup>16, SFLC18, UZM<sup>+</sup>14]. **Power-Saving** [TNBG07]. **Powerful** [Mor89b]. **PowerPC** [MAB<sup>+</sup>13]. **PRACE** [Mic09]. **Practical** [Cho01, WKLW19]. **Practice** [BR03]. **Practices** [PK04]. **Pragmatic** [DCD<sup>+</sup>13, Eyr06]. **Precision** [Ano02b, BDL<sup>+</sup>07, AFGQO19, LH18]. **Preconditioned** [MG87]. **Preconditioner** [BBS99, de 89, RMS<sup>+</sup>18]. **Preconditioners** [CE00, Cho01, Ma00]. **Predict** [VS03]. **Predicting** [BE07, WLC91, MCU<sup>+</sup>13]. **Prediction** [FFR<sup>+</sup>10, HL00, KUE<sup>+</sup>00, NKP<sup>+</sup>00, SCB<sup>+</sup>95, BAM<sup>+</sup>16, GCSK13, MKM<sup>+</sup>19]. **Predictions** [RIF01]. **preeminent** [YB12]. **Preemptive** [BBH<sup>+</sup>06]. **Preface** [Ano17b, Bak01, Bam12, BO08, CCF<sup>+</sup>06, CCD<sup>+</sup>06, CJZ08, DDS00, DKD07, DT97, DT01, Don02a, Don02b, Fow05, IK02, Kah07, KZ07, MD06, OL05, Pat05, PC08b, Wal03, YD07, dA03]. **Prefetching** [BIC<sup>+</sup>10, CZR<sup>+</sup>11]. **prefix** [Ozs16]. **Preprocessing** [DMT97]. **Preprocessors** [Ano01a]. **Pressure** [WLC91]. **Pricing** [BBMB19, YB07]. **Prime** [Ano92h, Sim90]. **Principal** [DF08]. **Principles** [DQFW90, GKN<sup>+</sup>96, TMWS91, HIT<sup>+</sup>14]. **Priori** [Cho01]. **Privacy** [Mar89a]. **Prize** [BBD<sup>+</sup>17]. **probabilities** [Haj93]. **Problem** [CDH<sup>+</sup>93, CSV91, DL09, UF89, CCBS11]. **Problems** [BGG05, CD97, FG97, FBW<sup>+</sup>87, GGS01, MR90, NK89, NKR90, SWW94, uITH07, TRS<sup>+</sup>10, TMMR10, KC18, Lai93, MBHF15, SPHW18]. **Procedure** [CGB<sup>+</sup>94]. **Process** [AM00, FGC<sup>+</sup>05, GCL93, SC04b, KILL13, WSD<sup>+</sup>14]. **Processes** [MWC<sup>+</sup>05, GSK<sup>+</sup>15]. **Processing** [AK91, FP02, GLGLB<sup>+</sup>11, KHP<sup>+</sup>04, LP10, MA15, MT89, Mor89b, MSK92, NTD10, OWO98, PC08a, PMS<sup>+</sup>04, Sal87, SPTT08, SWG<sup>+</sup>03, VLO<sup>+</sup>08, YW93, BE17, BLC17, CLG13, CMN12, DMQS12, GHHS15, KDO16, LQJG16, PH91, RDG12, RWM17, SFLC18, ZCZ<sup>+</sup>13]. **Processor** [MPG93, RRV06, SBF90, SK92, BGM15, DJJ<sup>+</sup>19, MAB<sup>+</sup>13, MMDA19, Mon12, PH19].

**Processors** [Bri10, BDG<sup>+</sup>00, LR07, LT88, MWAR<sup>+</sup>87, Mor89b, TMW<sup>+</sup>99, AGC<sup>+</sup>19, BBG<sup>+</sup>14, CZR<sup>+</sup>11, MBC<sup>+</sup>18, MSPSI15, PSV<sup>+</sup>16, SB19, THH<sup>+</sup>13, YIME19].  
**Product** [MCG04, Eri88, SCKW19].  
**Production** [MSK92, MDH<sup>+</sup>18, SH93].  
**Productivity** [Bar09, FGJ<sup>+</sup>04, KKS04, Kep04a, Kep04b, Kuc04, SB04, Ste04].  
**Profiling** [MSMW07, SGFC09]. **Program** [Kit90, NHG<sup>+</sup>96, WG07, Fem90, KJ05, Web91]. **Programmability** [CCZ07, CLSS09]. **Programmable** [HC08]. **Programme** [HT04a]. **Programmer** [BEK<sup>+</sup>18]. **Programmer-guided** [BEK<sup>+</sup>18]. **Programming** [BBG<sup>+</sup>10, BV11, BF01, BDG<sup>+</sup>00, CCH<sup>+</sup>88, CWG09, Cza03, EGG05, Gan88, Gir02, Kal09b, KKS04, Kok88, Lus09b, Mat95, NPT<sup>+</sup>06, PA11, PBAL09, Poz97, RW03, Sha88, SCB<sup>+</sup>95, SMW87, VEMR17, WLB92, BH17, CCBL18, EDB19, GBB18, GDKWS15, HLS<sup>+</sup>17, LBP18, MGB12, MDH<sup>+</sup>18, SB19]. **Programs** [ACM88, DLB07, GL04, HC10, LWOB97, NZ93]. **Progress** [AGL<sup>+</sup>87, BRU05, CAE<sup>+</sup>13, DJJ<sup>+</sup>19, MEK<sup>+</sup>19]. **Project** [BHK<sup>+</sup>06, CBB<sup>+</sup>96, PK04, BCC<sup>+</sup>01, DBA<sup>+</sup>09, DBM<sup>+</sup>11, Mic09, OKTR11, PS87, PHB04, Wit92]. **projects** [ACF<sup>+</sup>11]. **Promising** [Gir02]. **Propagation** [GKN<sup>+</sup>96, ASAK19]. **Properties** [ACG<sup>+</sup>90, DFS<sup>+</sup>05, WLC91, ZM07, AKW19]. **proposal** [ZKRA14]. **prospectus** [Bra91]. **Protein** [ACD07, BHK<sup>+</sup>88, Jon92, RGB<sup>+</sup>18, DSH<sup>+</sup>16]. **Protocol** [TNBG07]. **Prototypical** [WLVL<sup>+</sup>96]. **Provided** [LS06]. **Providing** [GKP97, SLL<sup>+</sup>19]. **Proximal** [NZ93]. **Pruners** [SLL<sup>+</sup>19]. **pulse** [ASAK19]. **Purity** [HC08]. **Purpose** [CKE08, Gus04, BE17]. **Purpose-Based** [Gus04]. **Pushing** [THH<sup>+</sup>13]. **PVM** [BDG<sup>+</sup>95, Mat95, SYF96]. **PVMGeant** [DZDR95]. **PVODE** [BH99]. **PyCOMPSs** [TBA<sup>+</sup>17]. **Python** [FKA<sup>+</sup>17, LD07, TBA<sup>+</sup>17].

**Q** [KMH<sup>+</sup>14]. **Qaulity** [Mat03]. **QCD** [Din91, JC12]. **QCDOC** [DGD<sup>+</sup>04]. **QM** [MFP<sup>+</sup>17]. **QM/MM** [MFP<sup>+</sup>17]. **QoS** [BSCC03]. **Quadrics** [YSP<sup>+</sup>05]. **Quadtree** [CL95]. **Quality** [PK04]. **quantitative** [WLG<sup>+</sup>18]. **Quantized** [Ham91]. **Quantum** [DFC90, FBW<sup>+</sup>87, IKY<sup>+</sup>10, KVY<sup>+</sup>90, Liu90, SSSW91, ARPY19]. **Quarks** [BOD<sup>+</sup>91, BEH<sup>+</sup>90]. **Quartic** [uITH07]. **quasi** [YLL<sup>+</sup>14]. **quasi-diagonal** [YLL<sup>+</sup>14]. **Quasigeostrophic** [KM95]. **Quda** [JC12]. **Query** [SWG<sup>+</sup>03]. **Querying** [CHZ02]. **Questions** [PPS09, CGW19]. **Queuing** [Ish91].

**RA** [AMC<sup>+</sup>18]. **Radar** [MPG93, SVBP13, ZCZ<sup>+</sup>13]. **radial** [EKF<sup>+</sup>19]. **Radio** [CBB<sup>+</sup>96, CLG13, VFJ<sup>+</sup>15]. **radiosity** [SABD13]. **Radiotherapy** [DCCS10]. **RaftLib** [BLC17]. **Raid** [Pla09]. **Raid-6** [Pla09]. **railway** [CGGC<sup>+</sup>16]. **random** [PNFC16]. **Randomly** [CYT<sup>+</sup>02]. **Range** [BBA87, MHW15]. **Ranger** [BWB<sup>+</sup>10]. **ranking** [AMC<sup>+</sup>18, DHL16]. **Rare** [BB02]. **rate** [BBG<sup>+</sup>14]. **rationale** [BBH<sup>+</sup>13]. **ray** [EEL15, PS12, CDH<sup>+</sup>93]. **raycasting** [BH12]. **rays** [PS12]. **Reaching** [CIWI17]. **Reacting** [LP10, MYC92]. **Reaction** [Koi90]. **Reactions** [ASW91, Reu92, TWK87]. **Reactive** [PGTS10, AKC<sup>+</sup>19]. **Reactor** [FSS13]. **Read** [RWM17]. **Reading** [Ano02r, Ano02s]. **Ready** [Sim90]. **Real** [BE17, KK01, NRR97, ODD07, TAR<sup>+</sup>08, VR00, WLC91, Wri12, YIME19, HPW<sup>+</sup>16, MJGL13, WZHG17]. **Real-Time** [KK01, NRR97, VR00, Wri12, BE17, YIME19, MJGL13, WZHG17]. **real-world** [HPW<sup>+</sup>16]. **Realistic** [BR03, LC06]. **Reciprocating** [YK07]. **Recognition** [BE07, RES87, CdVL<sup>+</sup>18, SKS<sup>+</sup>13].

**Reconfigurable** [BCC+06].  
**Reconfiguration** [LK01, IMB+19].  
**Reconstruction** [CSY10, FFR+10, BGM15, SSCF19, THH+13]. **Recovery** [BB02, BBH+13, HRW19, Sta19]. **rectangle** [Haj93]. **Recurrent** [SMW87].  
**Redistribution** [DP05, JW06, RRV06, SS10]. **reduce** [APD+15, CGW19]. **Reduced** [BFLL99].  
**Reduced-Dimensionality** [BFLL99].  
**Reducing** [BLOR18, CdVL+18, CSC19, DLY+98, JMC05]. **Reduction** [NRR97, ATL+15]. **References** [Ano02p, Ano02q]. **refined** [Sta19].  
**Refinement** [BDL+07, HT04b, SR05].  
**region** [SPNB14]. **region-based** [SPNB14].  
**Regional** [KM95, CDG+14, WSCZ05].  
**Regression** [VS03]. **Relational** [MS09].  
**Relative** [PUR94, VC89]. **Relativity** [RIF01]. **Reliability** [TNLP13, BEK+18].  
**Remeshing** [LDGR03]. **Remote** [BB02, DP05, NTKP06, HGMW12].  
**Remotely** [VLO+08]. **Renaming** [BPBL11]. **rendering** [BH12]. **Replication** [BCM+03, BCR+14]. **Report** [Buz89, Sal87]. **Representations** [AS00, WW92, CRS+19, DF18].  
**reproducibility** [MEK+19, PBE+19, SLL+19]. **reproducible** [IGDQO19]. **Request** [DD06]. **required** [CdVL+18]. **Requirements** [LPJ98].  
**Research** [Ano87a, Aus92, ABB+94, Bus87, Cap09, CDP+94, Don89, Duk91, IHMM87, KHK+09, Mar88a, Mir90, Pan97, SG09b, SKC10, TR92, BBW90, KT94, EM89].  
**reservation** [GSA+19, Mat03].  
**reservation-based** [GSA+19]. **Reservoir** [AWS01, Ewi88, KR94, KR95, PR95, ZC92, MS19]. **Resilience** [CGG+09, BCR+14, CBD+17, LFB+15].  
**Resilient** [BPR18, CGW19, KS05, RMS+18].  
**Resolution** [DFS+05, HB90, MAB07, WOS08, CHW+15, DVW+12, WDH+15].  
**resolved** [KBY+19]. **resonance** [JKBW18].  
**Resource** [AAF+01, EW06, FBBC03, MFK09, Mat03, WPBB01, YB07, CDRV15, MRD+15].  
**Resources** [QH08]. **Response** [BBC+00, ZOF90]. **Restart** [SSB+05].  
**restoration** [APD+15]. **Restrained** [CGB+94]. **Results** [BMR06, GNTLH97, Jea13, PUR94, WLVL+96, BRGR11, BSH+16]. **Rethinking** [KES+17]. **Retracted** [IMH+12].  
**Retrospective** [Mar88b]. **Reverse** [HHS19, QHCC17]. **Reverse-mode** [HHS19]. **Review** [Bus87, Con88, Mar88a, Nag89]. **Reviews** [Don87, Mar87a, Mar87b, McR87].  
**Revisited** [MS09, SZ11]. **RF** [HTWS08, YW93]. **ride** [VFJ+15]. **Ridge** [ABF+08, DGH+93, HGD91]. **Rigid** [Nak99]. **Rigid-Body-Based** [Nak99].  
**Rings** [RRV06]. **RISC** [Gro03].  
**RISC-Based** [Gro03]. **RNA** [SCB+95].  
**road** [TDM+17]. **Roadmap** [THDC09, DBM+11]. **Rocks** [Pap11]. **Role** [Pan97, Sab91, DMJS19]. **Roles** [MMS88].  
**roll** [HRW19]. **roll-forward** [HRW19].  
**Rolling** [FFNP97]. **Roothaan** [MMDA19].  
**Routines** [CDQS04]. **Routing** [CHZ02, MOK00]. **Run** [DLY+98, LYL+16].  
**Runge** [KR11, RR96]. **Running** [Fra05, MGB12]. **runs** [CdVL+18, SLL+19].  
**Runtime** [AJL+97, BH00, Dar99, Kal09b, LS06, PG18, HI12, HI13, IH15, LRLG19].  
**Runtime-compilation** [PG18].  
**S** [Lai93, WOG95, LYL+16]. **S-3800** [WOG95]. **S-MP** [Lai93]. **SAMCEF** [GCD97]. **Sampling** [MR04]. **San** [Mai87].  
**SAR** [AAC+97]. **SARA** [SBWS99].  
**Satellites** [BKS+07]. **saturation** [CIWI17].  
**Saving** [TNBG07, SKSG19]. **Scala** [SFP02].  
**Scalability** [BCYS11, DR06, FSC+11, GS05, HLW00, KC18, MWC+05, YIN+11, DAB+12, MW12, SPHW18]. **Scalable**

[CD06, CHZ02, DW97, DMT01, FKT01, HGMW12, IBC<sup>+10</sup>, JSSZ09, MCW<sup>+00</sup>, MS05, MAJJS03, SDJ17, SFP02, WLB92, ZLGS99, ZRÇ<sup>+06</sup>, dPIdA03, DEE<sup>+12</sup>, EKF<sup>+19</sup>, GEKO19, HLH<sup>+19</sup>, JBOT19, KHS<sup>+19</sup>, TDM<sup>+17</sup>, YB12]. **Scalar** [Ish91, OCC<sup>+08</sup>, FU12, KS89]. **scalar-type** [FU12]. **Scale** [AS00, AK91, BDP01, Ber92, BBA87, BCC<sup>+06</sup>, CWHP99, Ewi88, Fra05, GGS01, Gun00, GNB11, Her09, HLW00, HSLK11, Joh01, Key09, KUE<sup>+00</sup>, LT88, LC06, MPS15, Mor89b, NKR90, Nak99, PS87, SD87, YRA<sup>+02</sup>, ZRÇ<sup>+06</sup>, dSSB<sup>+08</sup>, AMB<sup>+18</sup>, BAM<sup>+16</sup>, BLOR18, BEK<sup>+18</sup>, DCM<sup>+17</sup>, EEL15, GDKWS15, GMWG10, HIT<sup>+14</sup>, HRW19, IKMS<sup>+19</sup>, JBOT19, LM03, LDW<sup>+12</sup>, MBHF15, MJD16, MRD<sup>+15</sup>, STP<sup>+13</sup>, SIC<sup>+19</sup>, VOL<sup>+14</sup>, YIME19, ZKRA14]. **scales** [BEW16, PBE<sup>+19</sup>]. **Scaling** [CGB<sup>+94</sup>, CK01, CLM<sup>+16</sup>, GHHS15, ZM07, GR17, INY<sup>+14</sup>, MKM<sup>+19</sup>, SKSG19]. **Scattering** [MBF<sup>+11</sup>]. **scene** [SABD13]. **Schedule** [SBWS99]. **Scheduler** [LS06, TR17]. **Scheduling** [ATN<sup>+00</sup>, BKRSR09, BPK<sup>+07</sup>, BR03, BBH<sup>+06</sup>, CJ06, CKPD99, CBL06, DLG06, Eyr06, JW06, KCC<sup>+06</sup>, LJC<sup>+10</sup>, MYCR06, SG07, TR17, WvNM<sup>+06</sup>, ABD<sup>+18</sup>, ABG<sup>+19</sup>, BPR18, GSA<sup>+19</sup>, HLC<sup>+19</sup>, Jon12, LQJG16, Mat03, OPW<sup>+12</sup>]. **schema** [ICPSG18]. **Scheme** [BG00, GS05, DMSMG18, IKMS<sup>+19</sup>, KPR17, KHS<sup>+19</sup>]. **Schemes** [BS88, BSS15, BBMB19, SZC12]. **Schrödinger** [BFL99, IKY<sup>+10</sup>]. **Schwarz** [GKMT00, PR95]. **SCIARA** [SDF<sup>+17</sup>]. **SCIARA-fv3** [SDF<sup>+17</sup>]. **Science** [All88, Blo87, CD97, CDH<sup>+97b</sup>, Don89, Duk91, GKN<sup>+96</sup>, GL09, HBSM03, HT04a, HWP03, Joh01, Mai87, Mer87, Nas92, RS88, Sab91, Web91, WWA<sup>+11</sup>, ADMP18, ACF<sup>+11</sup>, CMS<sup>+11</sup>]. **Sciences** [NKR90, DGH<sup>+93</sup>]. **Scientific** [AS00, BAA<sup>+06</sup>, BBA87, BJK07, DT99, DT11, DT17, Fol90a, Gaf88, GL97, HME90, Hab90, HLP<sup>+03</sup>, JLL04, JMC05, KPM<sup>+96</sup>, KWB06, LS90, Mar87a, OCC<sup>+08</sup>, Sal87, SE92, vLRA<sup>+03</sup>, ASHH16, CMS<sup>+11</sup>, CDL<sup>+19</sup>, CBD<sup>+17</sup>, DPA<sup>+18</sup>, DMJS19, DMQS12, DT19, DCD<sup>+13</sup>, DAC<sup>+14</sup>, EKD<sup>+12</sup>, FKA<sup>+17</sup>, IMB<sup>+19</sup>, LWT<sup>+11</sup>, MGB12, PBE<sup>+19</sup>, SIC<sup>+19</sup>, TDG<sup>+19</sup>]. **sclerosis** [SKS<sup>+13</sup>]. **screening** [ICPSG18, MSPSI15]. **SE** [DEE<sup>+12</sup>, KJH96]. **Sea** [LPJ98, CDG<sup>+14</sup>]. **Search** [VDB04, CSC19, FTB13]. **Search-Based** [VDB04, FTB13]. **Searches** [FBBC03]. **Second** [uITH07]. **Second-Order** [uITH07]. **Secondary** [SCB<sup>+95</sup>]. **sectioning** [KPR17]. **Seeing** [LPG88]. **Seeking** [Bar09]. **Segmentation** [Kal09a]. **Seismic** [CDH<sup>+97b</sup>, OWO98, ZRÇ<sup>+06</sup>, QHCC17, SFCL18, TAM<sup>+16</sup>]. **Select** [KKDV03]. **Selected** [DT11, OL05]. **Selection** [CY08, DTD14, LTPK17]. **Selective** [RES87]. **selector** [dRADS<sup>+18a</sup>]. **Self** [BGF02, CBL06, DE03, FWSW02, GHZ10, NC18]. **self-** [NC18]. **Self-Adapting** [DE03]. **Self-Organization** [FWSW02]. **Self-Organized** [BGF02]. **Self-Organizing** [CBL06, GHZ10]. **Semantic** [FP02]. **Semantics** [FGC<sup>+05</sup>]. **semi** [KRR19, MBHF15]. **semi-Lagrangian** [KRR19]. **semi-synchronised** [MBHF15]. **Semiconductor** [FWZ91, PHC<sup>+10</sup>, Lai93, Rad18, TKS88]. **Semiconductors** [Cla91]. **Sensed** [VLO<sup>+08</sup>]. **Sensor** [AKP08, BB02, BGF02, CYT<sup>+02</sup>, CHZ02, FP02, JMP02, QWIC02, STP<sup>+13</sup>]. **Sensors** [FWSW02]. **separated** [CvG11]. **September** [OL05]. **Sequence** [Jon92, MP18]. **sequencing** [MBC<sup>+18</sup>]. **Sequential** [WG07]. **Serial** [NKR89, NKR90]. **Series** [ACD07, Mar88a]. **Server** [CD97, DD06]. **Servers** [CD06]. **Service** [HLP<sup>+03</sup>, Hua03, Mat03, WHL03]. **Service-based** [HLP<sup>+03</sup>].

**Service-Oriented** [Hua03]. **Services** [AEG<sup>+03</sup>, CBA<sup>+18</sup>, ECG<sup>+13</sup>, ZKRA14]. **Sesam** [BBA87]. **Set** [JLL04, PTGB02]. **sets** [CDL<sup>+19</sup>, LGDH16]. **Severe** [WJS<sup>+90</sup>]. **shallow** [EKF<sup>+19</sup>, EAG<sup>+19</sup>, LVA<sup>+13</sup>]. **shallow-water** [EAG<sup>+19</sup>]. **Shape** [WCDS99]. **Shared** [AH93, BMWD87, Bri10, BEF<sup>+95</sup>, CDT05, CWG09, Gir02, HC10, LRT07, MWAR<sup>+87</sup>, NPT<sup>+06</sup>, WG07, ZC92, BH12, DEKV92, KDO16, SB19, THDS19]. **Shared-Memory** [AH93, CWG09, BH12, DEKV92, SB19]. **shared/distributed** [THDS19]. **Shelf** [LPJ98]. **SHMEM** [BBDH14]. **Should** [Pan92]. **shuffle** [HPW<sup>+16</sup>]. **shutdown** [BLOR18]. **Side** [HTSK90, kLCCW07]. **Sided** [GFD05, LRT07, TGT05]. **Sidney** [Mar91]. **Sieves** [CH94, Mon89]. **Signal** [FP02, PMS<sup>+04</sup>]. **Signals** [Arn07]. **Silent** [BSS15]. **silico** [MSPSI15]. **silicon** [HXW<sup>+13</sup>]. **similarity** [LFB<sup>+15</sup>]. **Simple** [Kal09b, SC04b, SBWS99]. **Simulate** [BMT89, GMWG10]. **simulated** [KKL<sup>+19</sup>]. **Simulating** [BEH<sup>+90</sup>, Din91, Haj93]. **Simulation** [AWS01, ABF<sup>+99</sup>, BDP01, BHdR09, BFNv07, CK01, Cla91, CB95, CM97, DCCS10, DZDR95, Ewi88, FFNP97, GCL93, GP93, HTSK90, IKY<sup>+10</sup>, Koi90, KR94, KR95, LP10, LWL05, LC06, MKG90, Nak99, PPK09, PR95, PS87, PHC<sup>+10</sup>, Reu92, RKKC90, TWK87, WBG06, WBM90, ASAK19, ARPY19, BSW<sup>+14</sup>, CHW<sup>+15</sup>, DAC<sup>+14</sup>, HLH<sup>+19</sup>, HXW<sup>+13</sup>, IKMS<sup>+19</sup>, JKD<sup>+11</sup>, JRT16, KDO16, KDH18, LPB<sup>+16</sup>, MS19, STS17, TSH<sup>+19</sup>, TAM<sup>+16</sup>, Udd17, VOL<sup>+14</sup>, WET<sup>+19</sup>, WSD<sup>+14</sup>, YIME19]. **Simulation-Based** [PPK09]. **Simulations** [ABAS87, BG00, BYT91, BRT<sup>+92</sup>, CBSB01, CBB<sup>+04</sup>, CH94, DLY<sup>+98</sup>, DFMD94, FSS13, GGS01, Ham91, HKK88, HSLK11, HZ91, KDH11, KT99, KWB06, MD99, MHS11, NKiN<sup>+08</sup>, PGTS10, PK04, RTRG<sup>+07</sup>, SSSW91, THC<sup>+96</sup>, AKC<sup>+19</sup>, AKW19, BEW16, CCO<sup>+19</sup>, CGST19, CMN12, DFT<sup>+15</sup>, FIMU19, FT19, HPW<sup>+16</sup>, IMW<sup>+13</sup>, JBOT19, KMW<sup>+13</sup>, KBY<sup>+19</sup>, KHS<sup>+19</sup>, LVA<sup>+13</sup>, MFP<sup>+17</sup>, PPC<sup>+16</sup>, Rad18, RAB<sup>+15</sup>, THDS19, YWL<sup>+14</sup>]. **Simulator** [BCM<sup>+03</sup>, CGGC<sup>+16</sup>, VSS<sup>+13</sup>, IKY<sup>+10</sup>]. **simulators** [AHB<sup>+16</sup>]. **Simultaneous** [ABAS87, TNLP13]. **Single** [BCJ01, TR17]. **Singular** [Ber92]. **situ** [AGHR19, ARPY19, BCLP17, MFB<sup>+19</sup>]. **situation** [GCSK13]. **Six** [WOG95, KRR19]. **six-dimensional** [KRR19]. **SKA** [VFJ<sup>+15</sup>]. **skeletonisation** [BE17]. **Skeletonization** [DIB00]. **Skewers** [HC08]. **SLA** [QH08]. **Slouching** [Lus09a]. **small** [PUR94]. **Smart** [MBF<sup>+11</sup>, Gro03]. **sMC** [KPST18]. **Smith** [RGB<sup>+18</sup>]. **Smoothed** [PGTS10]. **SOA** [DCL<sup>+08</sup>]. **SOA-Based** [DCL<sup>+08</sup>]. **Social** [NKR90, KTWL18]. **Sodium** [DQFW90]. **Soft** [AG18, GHHS15, RMS<sup>+18</sup>, YZC<sup>+15</sup>]. **Software** [ADMP18, Ano87c, Ano87f, BV11, BCC<sup>+01</sup>, BFNv07, CDP<sup>+94</sup>, Dar99, DW97, DE03, DBA<sup>+09</sup>, DBM<sup>+11</sup>, DGP<sup>+97</sup>, DJC05, Fol90a, GCD97, GKMT00, Her09, KS09b, LRO10, LQJG16, LDB<sup>+06</sup>, MM90, PPS09, PA11, PK04, SG09b, CSC19, DTL19, JDAD19, JdSA<sup>+17</sup>, JC12]. **Software-defined** [ADMP18, JDAD19]. **Soil** [CWHP99]. **Solaris** [Ano01a]. **Solid** [DQFW90, SK92]. **Solidification** [MWC<sup>+05</sup>, SHK<sup>+18</sup>]. **Solution** [BHK<sup>+88</sup>, BDL<sup>+07</sup>, CGB<sup>+94</sup>, MR90, PRT90, RS03, uITH07, TMMR10, CSGM17, CCBS11, CvG11, CMN12, ESW<sup>+12</sup>, MEK<sup>+19</sup>, RDG12]. **Solutions** [Fro91, WD19]. **Solve** [BCCL09, CDH<sup>+93</sup>]. **Solved** [CSV91]. **Solver** [BGG05, BH99, CM97, HR97, KDL01, Mav02, PR95, AKP<sup>+18</sup>, AFL<sup>+18</sup>, BSW<sup>+14</sup>, CHT<sup>+19</sup>, EKF<sup>+19</sup>, ESW<sup>+12</sup>, HHSM19, KC18, KRR19, KDH18, OGM<sup>+16</sup>, RMV<sup>+19</sup>, RWM17, ZZG<sup>+14</sup>]. **Solvers** [DR06, GGS01, Key09, KR11, ATL<sup>+15</sup>,

EAG<sup>+</sup>19, MSHPV18]. **solves** [SZ11].  
**Solving** [BS88, BEF<sup>+</sup>95, CD97, HT04b, IJ93, KS89, Kum89, Man97, NZ93, SBF90, WT99].  
**Some** [Gir02, PPS09]. **Sometimes** [RAGW93]. **Sonic** [WW92]. **Sorting** [Arn07, BSK14]. **sound** [MJGL13]. **Source** [CYT<sup>+</sup>02, BSW<sup>+</sup>14, MJGL13]. **Sowing** [GL97]. **Space** [FBBC03, JSSZ09, MHW15, ODD07, SBG10, FU12, HLW<sup>+</sup>16, MPD<sup>+</sup>12]. **space-aware** [HLW<sup>+</sup>16]. **Spaceborne** [SKB01]. **SPAI** [BBS99, Ma00]. **spanning** [dAVCM<sup>+</sup>19]. **Spark** [KWEF18]. **Sparse** [AD93, Ano02a, AGL<sup>+</sup>87, Ber92, BELF07, Cho01, GG11, HR97, IYV04, KC92a, KC92b, MC90, Ma00, Man97, MCG04, SZ11, SCFK04, UF89, WT99, ASHH16, ATD17, CvG11, GG14, GGO16, MSHPV18, SCR11]. **Sparsity** [Cho01, IYV04]. **spatial** [SPHW18, WDH<sup>+</sup>15]. **Spatially** [WBG06]. **Spatially-Explicit** [WBG06]. **spatio** [STP<sup>+</sup>13]. **spatio-temporal** [STP<sup>+</sup>13]. **Special** [BV11, BM13, BH17, BE18, CKE08, DT97, DT99, DT06, DT13, DT17, DT19, HdV18, MPI98, Mas19, MFB<sup>+</sup>19, ME14, Nag93, OV13, PA11, WD19, Yel04, SDS12]. **Special-Purpose** [CKE08]. **specialization** [CBM13]. **Species** [BB02]. **Specific** [BH06, CDH<sup>+</sup>97b]. **Spectral** [BG00, CB95, DFS<sup>+</sup>05, FSN08, Tho90, DEE<sup>+</sup>12, EAG<sup>+</sup>19, MGS<sup>+</sup>15]. **Speed** [Ano87d, BAM<sup>+</sup>16, Mar87a]. **Spherical** [KMPJ08]. **Spiral** [PMS<sup>+</sup>04]. **Spline** [Fro91]. **Splines** [uITH07]. **Splitting** [IS96]. **Spotch** [DGRK17]. **Sponsored** [Sal87]. **Spotlight** [MPG93]. **Spread** [GKB93]. **SRP** [MJGL13]. **SSOR** [Ma00]. **Stability** [ACG<sup>+</sup>90, BE07, FWZ91]. **Stacking** [BBR10]. **Standard** [Ano94b, Don02a, Don02b, MPI98, THH<sup>+</sup>13, Poz97]. **Standards** [Pan92]. **StarPU** [HGWN14]. **stars** [HLH<sup>+</sup>19]. **StarSs** [PBAL09]. **State** [CBV97, DKMT18, MYCR06, WLC91]. **Static** [BLRR01, BR03, dRADS<sup>+</sup>18b, SCB14, TR17]. **Stationary** [SCFK04]. **Statistical** [EGMP93, EJD<sup>+</sup>19, FWSW02, Her88, MR04, NRR97, VDB04, ZM07]. **Status** [MB87]. **Steady** [MYCR06]. **Steady-State** [MYCR06]. **Steering** [GKP97, KWB06, VR00]. **Stefan** [CSV91]. **stencil** [APD<sup>+</sup>15, WKLW19, YFS<sup>+</sup>14]. **stencil-based** [WKLW19]. **stencil-reduce** [APD<sup>+</sup>15]. **stencils** [SB19]. **stepping** [BSS15]. **Stiff** [BCCL09]. **Stochastic** [AK93, ABAS87, LP10, NZ93]. **Stokes** [Mav02, SBF90, ZZG<sup>+</sup>14]. **Storage** [KR11, GG14]. **store** [KV19, KES<sup>+</sup>17]. **Storm** [WJS<sup>+</sup>90]. **Strategies** [BCM<sup>+</sup>03, FBBC03, GWKN08, MOK00, WPBB01, EMP<sup>+</sup>18, MRD<sup>+</sup>15, OPW<sup>+</sup>12, SCD<sup>+</sup>19, SIC<sup>+</sup>19, SDF<sup>+</sup>17, SKSG19]. **Strategy** [MCW<sup>+</sup>00, SVN09]. **stratified** [AMC<sup>+</sup>18]. **stream** [BLC17, DKMT18, LBB17]. **streamed** [GG14]. **streaming** [BRGR11, MAB<sup>+</sup>13]. **Strong** [MKM<sup>+</sup>19, INY<sup>+</sup>14]. **strongly** [ZZG<sup>+</sup>14]. **Structural** [YCHH90, MJD16, PUR94]. **Structure** [BH06, CGB<sup>+</sup>94, CBL10, CSY10, FWZ91, Jon92, KT99, Liu90, SCB<sup>+</sup>95, SYF96, TMW<sup>+</sup>99, HTD<sup>+</sup>14, HIT<sup>+</sup>14, KC18, LDLD19]. **Structure-Specific** [BH06]. **Structured** [LDGR03, Ma00, SR05, WBG06, Ytt97, RV15]. **Structures** [BHK<sup>+</sup>88, DFC90, FFR<sup>+</sup>10, GCL93, GG11, HB90, HA91, JP93, DSH<sup>+</sup>16, EMP<sup>+</sup>18, JKBW18]. **Studies** [CHT<sup>+</sup>19, CBW95, DQFW90, HOPB92, HE01, LS06, SABK94, BCYS11, GDKWS15, LDLD19, SSR<sup>+</sup>14, PB19]. **Study** [ASW91, BF01, CDH<sup>+</sup>97b, DJJ<sup>+</sup>19, GLGLB<sup>+</sup>11, GL97, HL10, HLS<sup>+</sup>17, JW06, KKCB98, KR94, KR95, LC90, MMD98, PPK<sup>+</sup>04, Sci92, TXD<sup>+</sup>07, WGI90, WLB92, WJS<sup>+</sup>90, WW92, BSW<sup>+</sup>14, BDFVP15, CGGC<sup>+</sup>16, CMS<sup>+</sup>11, DTL19, IFA15, IMB<sup>+</sup>19, KC18, LFB<sup>+</sup>15, MBvdG13, MCR<sup>+</sup>17, OF17, TKA<sup>+</sup>17, THC<sup>+</sup>11, YWL<sup>+</sup>14]. **Studying**

[BCM<sup>+</sup>03, BOD<sup>+</sup>91]. **subband** [VSS<sup>+</sup>13]. **subcellular** [CHW<sup>+</sup>15]. **Subdomains** [FG97]. **Subgrid** [GS05]. **Subprograms** [Don02a, Don02b]. **Subroutines** [KJH96, JO92]. **Subsetting** [ZRC<sup>+</sup>06, AMC<sup>+</sup>18]. **substitution** [DTDP14]. **structures** [SCR11]. **successful** [CBA<sup>+</sup>18]. **Suggestions** [Ano02r, Ano02s]. **Summary** [Moh09, Sal87]. **Supercluster** [HBC<sup>+</sup>08]. **Supercomputer** [ATD<sup>+</sup>88, Ano87b, Ano91b, Ano91a, Ano92g, Ano92e, Ano92f, Ano93a, Ano94a, Ano94c, Ano95b, Ano95a, Ano96a, Ano97b, Ano97c, Ano97a, BBW90, CL95, CLP<sup>+</sup>99, Con88, MKG90, Mai87, McN89, MM90, MA89, Mir90, Mor89a, MR90, Nas92, Sci92, SB04, Web91, WOG95, Bra91, FU12, KMH<sup>+</sup>14, SDI<sup>+</sup>19, Duk91, MAB07, Mar88a]. **Supercomputing** [OCC<sup>+</sup>08]. **Supercomputers** [Ald89, ABF<sup>+</sup>99, AGL<sup>+</sup>87, Bai88, BSBF89, BCK<sup>+</sup>89, BWB<sup>+</sup>10, BYT91, Bro88, CDD<sup>+</sup>90, DDM87, Gen88, Mar89a, McN89, MG87, NKiN<sup>+</sup>08, YM91, ZC92, DCD<sup>+</sup>13, HI12, HI13, IH15, PH91, SLL<sup>+</sup>19, WET<sup>+</sup>19, ZBMK11, Gen88, Bus87, Mar87b]. **Supercomputing** [All88, Blo87, DFP<sup>+</sup>96, EM89, Eri88, Gan88, GKN<sup>+</sup>96, LC90, Mar89b, McN87, MMS88, Nas92, NBB<sup>+</sup>96, Nun87, RS88, SABK94, Aus92, BBB<sup>+</sup>91b, Bra91, BBW90, KT94, MP95, TR92, All88]. **Superconductors** [JP93]. **Supersonic** [MYC92]. **supervised** [HGWN14]. **Supplemented** [SBBS06]. **Support** [BBG<sup>+</sup>10, BV11, BCC<sup>+</sup>01, CBB<sup>+</sup>04, CFK<sup>+</sup>94, Dar99, Gro03, YSP<sup>+</sup>05, RMV<sup>+</sup>19, SKZ<sup>+</sup>18]. **Supporting** [ZRC<sup>+</sup>06]. **SUPRENUM** [MST88]. **surface** [BCYS11, MCR<sup>+</sup>17]. **surfaces** [DF18]. **survey** [GR17, JdSA<sup>+</sup>17]. **Sustained** [MSK92, TAR<sup>+</sup>08]. **Swapping** [SC04b]. **swarm** [ABH<sup>+</sup>18]. **SwinDeW** [LJC<sup>+</sup>10]. **SwinDeW-C** [LJC<sup>+</sup>10]. **SWIRL** [VRB<sup>+</sup>19]. **SX** [LT90, Mor89a]. **SX-2** [LT90, Mor89a]. **Symbolic** [Jea13]. **Symmetric** [BGG05, Gir02]. **Symposium** [Mar88a]. **synchronised** [MBHF15]. **Synchronization** [TGT05, SPNB14]. **Synchronous** [DGP<sup>+</sup>97, Jon12, WDW<sup>+</sup>12]. **syntax** [JO92]. **Synthesis** [CBB<sup>+</sup>96, Kep04a, Wri12]. **Synthetic** [MPG93, SVBP13, ZCZ<sup>+</sup>13]. **System** [AM00, BGI<sup>+</sup>99, BCJ01, CL95, CLF87, CTD<sup>+</sup>05, CJK<sup>+</sup>05, DVW<sup>+</sup>12, DJC05, ESW<sup>+</sup>12, GHM<sup>+</sup>10, GS99, GHZ10, GNB11, HLP<sup>+</sup>03, JLO05, JLL04, LDB<sup>+</sup>06, MWM<sup>+</sup>08, MST88, SSB<sup>+</sup>05, SG09a, uITH07, SBG10, SFP02, WLVL<sup>+</sup>96, CVJ12, DEL<sup>+</sup>12, HLW<sup>+</sup>16, IBC<sup>+</sup>10, JC12, LDW<sup>+</sup>12, MEK<sup>+</sup>19, SKS<sup>+</sup>13, SH93, TNLP13, DCCS10, EDSV06, GCCC<sup>+</sup>03, MHW15, SM06, WSCZ05]. **System-Initiated** [SSB<sup>+</sup>05]. **Systems** [ATN<sup>+</sup>00, AGL<sup>+</sup>87, BGG05, BCCL09, BV11, BS88, BHdR09, BSCC03, BRT<sup>+</sup>92, BDL<sup>+</sup>07, CJ06, Cap09, CW01, CY08, CBW95, Dar00, Del93, DFH<sup>+</sup>96, GJMS88, GNB11, Her09, HT04b, Kal09b, KK01, KR11, LP10, MC90, Ma00, Man97, MCW<sup>+</sup>00, MR04, NKP<sup>+</sup>00, Sim90, SDA<sup>+</sup>01, SKB01, VC89, WT99, YRA<sup>+</sup>02, de 89, dPIdA03, ABD<sup>+</sup>18, BLOR18, BBMB19, BCR<sup>+</sup>14, BAP<sup>+</sup>12, CSGM17, CAE<sup>+</sup>13, CvG11, DHL16, FU12, GCSK13, GBB18, HI12, HI13, IFA15, IH15, IK18, KTWL18, Kum89, LST15, LRLG19, LWT<sup>+</sup>11, LVA<sup>+</sup>13, LH19, OPW<sup>+</sup>12, RV15, RDG12, SCD<sup>+</sup>19, TKA<sup>+</sup>17, WD19, YB12]. **T3D** [ABF<sup>+</sup>99]. **T3E** [BBS99, Ma00, SBBS06]. **Tables** [vLRA<sup>+</sup>03]. **tailored** [FTB13]. **tale** [Hea15]. **Target** [BG02]. **targetDP** [GS18]. **Task** [BR03, CKPD99, CFK<sup>+</sup>94, CCBL18, PBAL09, CHT<sup>+</sup>19, EDB19, MBHF15, OPW<sup>+</sup>12, SMZ<sup>+</sup>18]. **Task-Based** [PBAL09, CCBL18, CHT<sup>+</sup>19, EDB19]. **task-parallel** [SMZ<sup>+</sup>18]. **Tasking**



[JMP02, IK18]. **Tasks** [GHZ10, WvNM<sup>+</sup>06, HTD<sup>+</sup>14, HLH<sup>+</sup>19]. **Tau** [SM06]. **Taxol** [CGB<sup>+</sup>94]. **TCGMSG** [Mat95]. **Technical** [Don02a, Don02b]. **Technique** [ODD07, WGI90, ASHH16]. **Techniques** [Arn07, BDL<sup>+</sup>07, FFR<sup>+</sup>10, KM95, VS03, INY<sup>+</sup>14, MSHPV18, UZM<sup>+</sup>14]. **Technologies** [AB01, Dar99]. **Technology** [BB02, Dar00, Mer87, VFJ<sup>+</sup>15]. **Tefloin(R)** [DVC88]. **Telescopes** [Wri12]. **Televisualization** [HME90]. **Template** [Poz97, BLC17]. **Temporal** [BPBL11, CY08, STP<sup>+</sup>13, WDH<sup>+</sup>15]. **tensor** [SCKW19]. **tensor-product** [SCKW19]. **Teraflop** [HLW00]. **Teraflop-Scale** [HLW00]. **Teraflops** [SS99, TAR<sup>+</sup>08]. **TeraGrid** [Har11]. **Terapixel** [ACF<sup>+</sup>11]. **Testbed** [BCC<sup>+</sup>06]. **Testing** [CDT05, KDL01]. **Texas** [Nas92]. **texture** [IMH<sup>+</sup>11, IMH<sup>+</sup>12]. **Tflop** [LYL<sup>+</sup>16]. **Tflop/s** [LYL<sup>+</sup>16]. **Their** [LRO10, Mar87b, RES87, Haj93, PUR94]. **Thelma** [OKTR11]. **Theme** [Hau94]. **Theoretic** [FWSW02, WEPB12]. **Theoretical** [ASW91]. **Theory** [BR03, Mer87, Mor89a]. **Thermochemical** [vLRA<sup>+</sup>03]. **Thermodynamics** [GKH<sup>+</sup>91]. **Thin** [MD99, GSK<sup>+</sup>15]. **Thin-Film** [MD99]. **Thinning** [DIB00]. **Third** [Lee03]. **thousands** [GHHS15]. **Threaded** [BBG<sup>+</sup>10, LVA<sup>+</sup>13]. **threads** [DJJ<sup>+</sup>19]. **Three** [BCZM07, BWB<sup>+</sup>10, CSY10, DD91, EGG05, LT90, MT89, TWK87, BE17, CRS<sup>+</sup>19, LSS93, YFS<sup>+</sup>14]. **Three-Dimensional** [BCZM07, CSY10, EGG05, LT90, MT89, BE17, LSS93, YFS<sup>+</sup>14]. **three-phase** [CRS<sup>+</sup>19]. **Throughput** [GHM<sup>+</sup>10, McN89, AGHR19, CMN12]. **throughput-oriented** [CMN12]. **Tianhe** [CLM<sup>+</sup>16, HXW<sup>+</sup>13, LYL<sup>+</sup>16]. **Tianhe-1A** [HXW<sup>+</sup>13]. **Tianhe-2** [CLM<sup>+</sup>16, LYL<sup>+</sup>16]. **tightly** [NOM<sup>+</sup>19]. **tiled** [TRS13]. **Tiling** [SCFK04]. **Time** [ACD07, BPBL11, KK01, LJC<sup>+</sup>10, MBF<sup>+</sup>11, Nak99, NRR97, Sim90, VR00, Wri12, BE17, BSS15, LST15, MJGL13, QHCC17, WZHG17, YIME19]. **Time-Dependent** [MBF<sup>+</sup>11]. **time-stepping** [BSS15]. **times** [MP95]. **Tissues** [BCZM07]. **Titanium** [YHG<sup>+</sup>07]. **Tokamak** [DSD<sup>+</sup>91, KPM<sup>+</sup>96]. **Tolerance** [Cap09, FGC<sup>+</sup>05, GKP97, GL04, JSSZ09, KWB06, LRG<sup>+</sup>16, MSHPV18, SKZ<sup>+</sup>18, SMZ<sup>+</sup>18, YZC<sup>+</sup>15]. **Tolerant** [BHK<sup>+</sup>06, FD04, WvNM<sup>+</sup>06, ASHH16]. **tomographic** [BGM15]. **Tomography** [CDH<sup>+</sup>97b, FFR<sup>+</sup>10]. **Too** [RAGW93]. **Tool** [LRO10, WBFB04, Ytt97, Eri88, IMS16, SDI<sup>+</sup>19, TDM<sup>+</sup>17, UCZ<sup>+</sup>15]. **Toolbox** [CD06, RMV<sup>+</sup>19]. **Toolkit** [FK97, LJO05, Poz97, Pap11, JLO05, LJO05, NPT<sup>+</sup>06]. **Tools** [CBM13, DW97, DMT01, DT06, GRC08, LDB<sup>+</sup>06, MWC<sup>+</sup>05, MM90, Pan97, PA11, SS89, SKZ<sup>+</sup>18]. **Toolset** [NKP<sup>+</sup>00]. **top** [WET<sup>+</sup>19]. **Top500** [Fei99]. **Topologies** [MOK00, SW04]. **Topology** [Chu99, GJMV18, KPR17]. **Topology-aware** [GJMV18, KPR17]. **toroidal** [IMW<sup>+</sup>13]. **Total** [YCHH90, RMV<sup>+</sup>19]. **Toys** [SS99]. **Trace** [JKD<sup>+</sup>11, NRR97, BDFVP15]. **Trace-based** [JKD<sup>+</sup>11]. **tracing** [PS12]. **Tracking** [BGF02, BG02, CYT<sup>+</sup>02, FIMU19, RPdB<sup>+</sup>19]. **Trade** [SR05]. **Trade-Off** [SR05]. **Traffic** [BG02]. **train** [PNFC16]. **Training** [AM00]. **trait** [WLG<sup>+</sup>18]. **Transfer** [MAJJS03, ATL<sup>+</sup>15, KT94]. **Transfers** [VS03]. **Transform** [DL97, BDFVP15, GLGLB<sup>+</sup>11, LDW<sup>+</sup>12]. **transformation** [WDW<sup>+</sup>12]. **Transformations** [YCHH90, TGP19]. **Transforms** [KNP<sup>+</sup>87, MJ04]. **Transition** [YSN90]. **Translations** [KMPJ08]. **transmission** [ABH<sup>+</sup>18]. **transparent** [CIWI17]. **Transport** [ABF<sup>+</sup>99, DR06, DSD<sup>+</sup>91, KVY<sup>+</sup>90, MMD98, MWAR<sup>+</sup>87, MB87, BSH<sup>+</sup>16, DMSMG18, DFT<sup>+</sup>15, SSR<sup>+</sup>14]. **traversal**

[FT19, GLZS14]. **Tree** [SWW94, FT19]. **Trees** [LK01, KPST18, dAVCM<sup>+</sup>19]. **Trends** [Ano87e, Fol90a, Tho90, Bus87]. **Triana** [HTWS08]. **triangle** [PS12]. **triangular** [SZ11]. **Tridiagonal** [BS88, Kum89]. **trillion** [TSH<sup>+</sup>19, TAM<sup>+</sup>16]. **trillion-atom** [TSH<sup>+</sup>19]. **Trondheim** [Buz89]. **Trough** [BAM<sup>+</sup>16]. **truly** [KT94]. **TSP** [WG07]. **tsunami** [AHB<sup>+</sup>16, BAM<sup>+</sup>16]. **tumor** [KKL<sup>+</sup>19]. **tuned** [YB12]. **Tuning** [Cza03, Kal09a, MJ04, RDG12, TM99, VDB04, Yel04, BH12, CH13, TRS13, THC<sup>+</sup>11]. **Turbine** [MKG90, KBY<sup>+</sup>19]. **Turbulence** [CDD<sup>+</sup>90, KPM<sup>+</sup>96, LWL05]. **Turbulent** [CB95]. **Turkey** [BE07]. **Turkish** [BE07]. **Turnaround** [MP95]. **Twenty** [TSH<sup>+</sup>19]. **TweTriS** [TSH<sup>+</sup>19]. **Two** [HE01, Rao02, Hea15, HLH<sup>+</sup>19, KS89, KDH18]. **two-dimensional** [KS89]. **Two-Paths** [Rao02]. **two-phase** [KDH18]. **Type** [CK01, FU12, JP93]. **Type-II** [JP93]. **typical** [FU12].

**U.S.** [Fem90, Kit90]. **UK** [HT04a]. **Ultra** [WOS08, DVW<sup>+</sup>12, HIT<sup>+</sup>14]. **Ultra-High** [WOS08]. **ultra-high-resolution** [DVW<sup>+</sup>12]. **ultra-large-scale** [HIT<sup>+</sup>14]. **ultrafast** [EEL15]. **Ultrascale** [NKiN<sup>+</sup>08]. **Ultrasonic** [ASAK19]. **ultrasound** [JRT16]. **unblocked** [IGDQO19]. **Unconstrained** [LT88]. **Uncovered** [Ano92h]. **uncovering** [SLL<sup>+</sup>19]. **Understanding** [ALL13, BWB<sup>+</sup>10, GNB11, WW92]. **Unified** [SMZ<sup>+</sup>18, AGC<sup>+</sup>19]. **Unit** [LP10, LQJG16, RDG12, RWM17, CZC<sup>+</sup>13]. **Units** [GLGLB<sup>+</sup>11, MA15, NTD10, Tho90, BE17, CLG13, CMN12, DMQS12, GHHS15, KDO16, PH19, SFCL18]. **universe** [RAB<sup>+</sup>15]. **University** [Nas92, ATD<sup>+</sup>88, Aus92, GNTLH97, SSNM92]. **unpredictable** [GSA<sup>+</sup>19]. **Unroll** [MCG04]. **unsplit** [SZC12]. **unstable** [NC18]. **Unstructured** [DMT97, Mav02, MCW<sup>+</sup>00, WCE95, KC18, WDW<sup>+</sup>12]. **unsupervised** [ZCZ<sup>+</sup>13]. **usable** [KT94]. **Usage** [FCLG07]. **Use** [CDL<sup>+</sup>19, Cho01, DD91, MFOAGE18, TKSK88, Mar87b]. **Used** [DFH<sup>+</sup>96]. **User** [FCLG07, LS06, LRG<sup>+</sup>16]. **user-level** [LRG<sup>+</sup>16]. **User-Provided** [LS06]. **Users** [Pan97]. **Using** [BHK<sup>+</sup>88, BKS<sup>+</sup>07, BCR<sup>+</sup>14, BBC<sup>+</sup>00, CGB<sup>+</sup>94, CWHP99, CDH<sup>+</sup>93, CL95, CKE08, CYT<sup>+</sup>02, CBV97, CW05, FD04, GLZS14, GNTLH97, HAF<sup>+</sup>96, HLW00, HE01, HC08, JLO05, Joh01, KDH11, LRT07, LWL05, Man97, MAB07, MCG04, MSK92, QWIC02, QH08, Rao02, SBWS99, TM99, THL88, VLO<sup>+</sup>08, VS03, WGI90, WOG95, ABH<sup>+</sup>18, ASAK19, APD<sup>+</sup>15, BE17, BCYS11, BGB<sup>+</sup>18, CGGC<sup>+</sup>16, CIWI17, CLBS17, DWT<sup>+</sup>19, DFT<sup>+</sup>15, EKF<sup>+</sup>19, FSC<sup>+</sup>11, GDKWS15, IMH<sup>+</sup>11, JC12, KDO16, KBY<sup>+</sup>19, KTWL18, KL13, LST15, LPB<sup>+</sup>16, MDH<sup>+</sup>18, MJD16, MJGL13, Pap11, PNFC16, PH19, SABD13, SKS<sup>+</sup>13, YZC<sup>+</sup>15]. **Utility** [LS06, YB07]. **Utility-Driven** [YB07]. **utilization** [DCD<sup>+</sup>13]. **utilizing** [SKZ<sup>+</sup>18].

**V** [BHK<sup>+</sup>06]. **validation** [SCB14]. **Value** [Ber92, Bus87, uITH07, SG91, KV19, KES<sup>+</sup>17]. **Variable** [BBR10, BGB<sup>+</sup>96, AMC<sup>+</sup>18, BSK14, ZZG<sup>+</sup>14]. **Variable-Complexity** [BGB<sup>+</sup>96]. **variation** [LTPK17]. **Variational** [NK89]. **vascular** [JKBW18]. **Vector** [AGL<sup>+</sup>87, Bai88, CSV91, DD91, Fro91, Gaf88, LT88, LRBS89, MC90, MG87, MCG04, OCC<sup>+</sup>08, GG11, GGO16, KS89, SCR11, YLL<sup>+</sup>14]. **Vectorization** [AD89, Reu92, Haj93]. **Vectorized** [IHMM87, MB87, TKSK88, YW93]. **Vectorizing** [HVKW05]. **Venice** [OL05]. **Verbs** [OF17]. **Verification** [CY08, BRR17]. **Version** [JLO05]. **versioned** [CBD<sup>+</sup>17]. **Versus** [PC08a, RTRG<sup>+</sup>07, GSA<sup>+</sup>19, GLGLB<sup>+</sup>11].

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