A Bibliography of Publications about Bitcoin and Digital Cash Systems

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Title word cross-reference

$1.2M$ [McM13]. $10$ [Pop17a]. 100× [CEN14]. $145$ [Cim19]. $190$ [McK19].
$1m$ [Sou13]. $2$ [Goo18]. $28.5$ [Gre13].
$3.3$ [Cim18a]. $37$ [Lee13]. $400$ [Nak18].
$400M$ [Gal18]. $530$ [YWW+18, YWS+18].
$62m$ [Nic17]. $735$ [Osb18b]. δ
[LL17b, LL17c]. PCS [KLR+17a]. N
[ZGR17]. n/2 [XHST20]. t [PCP20].

* [SKNM21].

-Bitcoin- [BS17a]. -privacy [LL17b, LL17c].

/ACM [TODM19].

1 [BH15]. 150 [Woo14]. 16th [Ker12]. ’17 [ACM17c]. 17th [Sad13]. 18-Month [De18].
19 [HSJ+21].

2.0 [AMLH18, SI16, Six17b, SALY17, Uli16].
2014 [Uni14]. 2019 [TODM19]. 20th
[GP17b].

3.0 [DM20]. 34th [OF15]. 3rd [ACM17d].

4.0 [GSF+20].

5G [LM20, NPDS20, Ser21, WHY+21].

’83 [CRS83]. 8th [Jue04].

ABE [GLY+21]. Ability [SGF+17].
Abstract [BLMR14, DNSY14, HIl14, HUl17].
DMR18, FRF+19, GKL15, GC08, GHG+21, KAK21, Li14a, Li14b, LZDA16, LTBY20, LHL21, MYSZ19, MM17, NPB+21, NAH15, SGK21, Ünv21, YS20, MLM+16, ZDL17b.

Analytical [KK17a, KK17b]. Analytics [BLPB17, BS17a, Moh19, VRK21, VMMA17, XAZY17, XAZY18, DNZ+19]. Analyze [CTM19]. Analyzing [DWC+17, FSW14, GDP+17, KLM17, LSO+15, LF16, Liv20, OVS+21, ZP17a, GJK+20]. anchored [NNGV19]. Ancient [Ber17]. andere [Six17e]. Andrew [Ano16c, SM-16].


Anonymization [WBK+17]. Anonymizing [DS15, WLS+16].

Anonymous [BSCG+14, BK17c, CLJ+21, Chr13, GM17, HBG16, MGGR13, ML14, Muf16, SCG+14, WCX21, MBK+21, MY11, SJX+20, ZLL+19a, ZMH+17, ZMH+18]. answer [Pec12]. Answers [Pav18]. Anti [Alz19, Bra13, AB20, AHC+21].

Anti-BIUFF [AHC+21].

Anti-Counterfeiting [Alz19, AB20].


Appetite [Pop18a]. Applicability [Scr18, Álv18]. Application [Bik16, But13b, CDD17, DXR+17, GGN16, HG15, HHO+21, Jas18, Kue18, OOF+17, Son18, SWE16, Zam19, AAE19, Ano21c, DSS+17, GL16, IFD+19, Sar21, ACW17, WLS17].

Application-Specific [Son18].

Applications [ACA+19, Ant21, Big20, BLNN17a, BLNN17b, CM16, CGT+21, GH05, HLC+17a, Kat16, LLH+20, MGM+17, McC18, OF15, Pan18, SG19, SHL+20, SC20, VSE21, VMMA17, WDLS17, WB17, Zha19, Ano21b, CK16, CXLC18, CXC+20, DMH18b, DM20, ES16, GKL15, KAP20, LTW+21, MPSW19, MBF+20, MCLH19, MFE+20, Pi16, TVK+20, WDL+18, XLL+19, ZWH+20, ZZ16, dORM+20, HYL21].

Applied [Wu19, IKY05]. Apply [Int14]. applying [NML19]. Approach [CX+17, DH17, GWF+21, HRF17, KK17a, LWZ+21, Liu19, LSH13, MZWX21, Mis17, MMT16b, NSNF17, Nia19, Not19, RAH+15, RFM+18, SCYP17, SOA17, XWL+19, Yan21, Bar17, BS20, CLS19b, CLS20, DMR19, FOA17, GLW+20, HRC20, HVM+18, LZZ+20, MFE+20]. Approaches [EBD+20, SPZ+20, JO13]. Appropriation [KD16]. Approval [AH12]. Approximate [DDX17, VDK16]. April [ACM17a, ACM17b, ACM17d, JRB+17, OF15, Sad13, Uni14]. AR/VR [Per20].

Architectural [AS14, WLL+13].

Architecture [AS14, CCH+20, GANT21, LLH+20, LST+17, PPR+20, RBL+17, SRP20, SNKG20, VDG19, WXH21, Wer18, Ano21b, Ano21d, GDA+21, HSGY20, KAP20, LML+19, RKP19].

Architectures [FS16]. Archival [LS17]. area [LZZ+20]. Areas [CGFH16].


ASIC [KZVT17, MKGT16a, MKGT16b, TVK+20].

ASICs [Bon14b].

Aspects [Dre17v, Eva14, Sch98]. Assessing [SBL19, YCM20]. Assessment [Ano18g, BBIH18, Mai18, CPSS20, Gof19]. Asset [BW17, GZH+14, KMOD17, LTW+21, Wij16]. Asset-Based [KMOD17].

Assets [COE+20a, NCS17, WSZ18, CAMS20, Nor17c, WHJ17, WHJ20].
Assisted
[DNY17, ARL20, MLTT20, XLL+21].
Associated [Van14b]. Assurance [LN17].
Asymmetric [BK17b]. Asynchronous [PSS17]. Atomic [MPSP17, ZAE20].
Atomically [MCHM17, MHM17]. Attack
[BS16, BRS17, Kami17, Ker18b, KKS+17b, SPB17, SOV+21, TSL+17, Bee16, PR16].
Attacked [SOU13]. Attacker [Goo18, Osb18a]. Attackers [Kan18].
Attacks [ABL+18a, AZV17, ABC17, CGGN17, CPNX20, GAK17, JLG+14, Ker18a, KKS+17c, LJM15, MSH17, SRB20, SGT19, VTM14, WB17, Ano18e, Ano18k, CEW15, CSC16, FTS+20, Fir18, Ker18b, KKS+17a, MLY120, NAH15, QHW+20, SKNM21, SGM20, Xu16, XGS+20, YTLD19].
Attention [HSB17d, HSB18h]. attorney [Far18b]. Attributes [CDD17, NTKS17]. AttriChain [SJX+20]. Auction
[JWNS19, NT21], auctioneer [DB16]. Auctions [Dim19, DB16]. Audit
[Bon16b, SS17b, ASM19]. Auditable [Bac02b, SBHD17, DMR19, HSX+21, Yue20]. Auditing
[CCH+20, ECD17, FBL+20, HZY+19].
augmented [Pou20]. August [CRS83]. außerhalb [WLS17]. Auswirkungen
[Blo18]. Authenticated
[MSCH15, ZCC+16, Yue20].
authenticating [PL20]. Authentication
[CCC19, DGP17, GADO17, IK17, JLL+19, Kri19b, Kue18, LN17, LLW17, MLL15, XJY17, CHL19, HHBS18, HZ20, LLH+18, ML17, NML19, PHH+20, SI16, XLL+21]. authorities [YYN+20]. Authority
[LN15, Lus18, Gon17]. authorization [MHL20]. Authorizing
[Dre17a].
Automata [ADM14b, DCK17].
Automated [Bik16, EMEHR17, GDP+17, Nar19, NPS+17, YW18, KBT120, ML20, PDWWS16]. Automatic
[CK16, EPY17, Ler14b, LTBY20, HS19b]. Automation
[BT18a, CCH+20, NNGV19]. Automotive
[FS16, SDK+17, Ano21e].
Autonocoin [Abr16]. Autonomous
[HYLY19, NST+17, NOT15, Shi19, DMSCA20]. Autoregressive [HG15].
Availability
[ASB+21, LST+17, LDH17, JO13, ZLX+17]. available [RST11]. Average [Smil18].
Avoid [KKS+17c]. Avoidance
[Hea13, SFMC21]. aware [PK21, RDDB19, SSSJ19]. Awareness
[SOL17].
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[SFYB21]. Bit [Sza08]. BitBeat [Vig15].

**BITCOIN** [BCJR15, CSN14, CMR+16, JRB+17, Ano18a, BS17a, BBMS14, CLS19b, CLS20, Cim18a, Dus14, ES18, GGKR21, KM20, MG16, Mez19, RS21, Six17f, SGK21, WYZ+20, Bre17, Cha14, Cra17, Gon17, Hol18, MYSZ19, NPB+21, Sal18, WHJ20, WQHX20, Aro12, CS16a, CRdK16, ABL+18a, AABE20, ALP15, ACM15, Ali15, AMLH15, AMLH18, AS14, AF16, ALMLS16, ALPBT17, And14, AKR+13, AK14, ADM14a, ADM14b, ADMM14, ADMM15, ADMM16, AM15, Ano13b, Ano14a, Ano14b, Ano17b, Ano17a, Ano17c, Ano17d, Ano18b, Ano18i, Ano18k, Ano21a, Ant16, Ant15, AZV17, Ast16, AMVA17, ACC+17, BDOZ11, BDOZ12, BMTZ17, BS16, BRS17, BDWW14, BSK+20, BHMW16, BBSU12, Bar17, BHI+14, BHI15, Bar14, BPI7a, BZ17, BLP17, BBP19, BSB16, BDP+15, BBBB15, Bec18, BHI+13, Bec16, BS15]. **Bitcoin** [Bel18, BSCG+14, BK14, BLMR14, Bel15, Ber13, BLP17, BBP19, BSB16, BDP15, BBBB15, Bec18, BHI+13, Bec16, BS15].

[SFYB21]. Bit [Sza08]. BitBeat [Vig15].

**BITCOIN** [BCJR15, CSN14, CMR+16, JRB+17, Ano18a, BS17a, BBMS14, CLS19b, CLS20, Cim18a, Dus14, ES18, GGKR21, KM20, MG16, Mez19, RS21, Six17f, SGK21, WYZ+20, Bre17, Cha14, Cra17, Gon17, Hol18, MYSZ19, NPB+21, Sal18, WHJ20, WQHX20, Aro12, CS16a, CRdK16, ABL+18a, AABE20, ALP15, ACM15, Ali15, AMLH15, AMLH18, AS14, AF16, ALMLS16, ALPBT17, And14, AKR+13, AK14, ADM14a, ADM14b, ADMM14, ADMM15, ADMM16, AM15, Ano13b, Ano14a, Ano14b, Ano17b, Ano17a, Ano17c, Ano17d, Ano18b, Ano18i, Ano18k, Ano21a, Ant16, Ant15, AZV17, Ast16, AMVA17, ACC+17, BDOZ11, BDOZ12, BMTZ17, BS16, BRS17, BDWW14, BSK+20, BHMW16, BBSU12, Bar17, BHI+14, BHI15, Bar14, BPI7a, BZ17, BLP17, BBP19, BSB16, BDP+15, BBBB15, Bec18, BHI+13, Bec16, BS15]. **Bitcoin** [Bel18, BSCG+14, BK14, BLMR14, Bel15, Ber13, BLP17, BBP19, BSB16, BDP15, BBBB15, Bec18, BHI+13, Bec16, BS15].
SBL19, SCYP17, SOA17, SI16, San14b, San14a, SSZ17, SK14, SK15, SK17, SCG+14, Sat20, SMD14, Sch13, SBR17, SBR16, SZ14, Sha17, SGF+17, Shi16, Sid14, SCAA13, Sir16a, Sir16b, Six17a, Six17b, Six17d, Six17c, Six17h, Six17i, Six17j, SLY15, Smi18, SPB17, SZ13, SZ15, SZ17, Son14, Son16b, SKG12, SKG13, Sou13, SMZ14, Ste17, Swa15a, SVS18, TFG17, TT16, TTC16, Tay13, Tay17, TD17b, TOM17, TS16, Un14, Und16, Ünv21, UJ16, Uri17, Urq17.

Bitcoin [VR15, VG17, Van14a, VCLK17, Van14b, VGJ17, VFV17a, VFV17b, VC15a, Vig15, VC15b, VDK16, VD17, VX17, VSM+19, Vra17, Wad18, WL15, WLY17, WH17, WQHX17, WLGL19, WLS+16, Wij16, WA15, WvB14, Wör16, WZQ+17, Wu19, YK15, Yev15, YV17, YSLH17, YTLD19, YSZ+19, ZW15, ZP17a, ZP17b, ZG15, ZC16, ZWQ+16, ZGTT16, ZDL17a, ZMH+17, ZMH+18, Zoh15, ZGR17, dBHC17, dre14, Ano16c, SM-16].

Bitcoin-Based [Van14b, Vas17, HCW+18].

Bitcoin-Exchange [MC13].

Bitcoin-Handbuch [MG16].

Bitcoin-like [VGJ15].

bitcoin-mining [Hol18].

Bitcoin-Netzwerks [Six17a].

Bitcoin-Related [KCD17].

Bitcoin-Systems [Six17i, Six17j].

Bitcoin/USD [HG15].

Bitcoingages [Ano15].

Bitcoins [DL17, ZDL17b, AF16, AFMD14, BDE+13, Bru17, Cap15, ES16, Gre13, Hol15, MY11, MC13, MeM13, MPJ+13, MPJ+16, RK15, Six17e, ZG+15].

BitConeView [BDP+15].

BitExTract [YSZ+19].

BitFlow [HGDD20].

BitIodine [SMZ14].

bitstrings [HS97].

Bitter [BBSU12].

bivariate [PCP20].

BIX [Muf16].

Blockchain [vdHEM+17].

blamed [Ano18k].

Blind [Cha83, WZQ+17].

Blindcoin [VR15].

Blinded [VR15].

Blindly [HGB16].
HHK18, HJPS16, HSB17b, HSB17a, HSB17c, HSB17d, HSB18d, HSB18e, HSB18g, HSB18h, HSB18i, HWCL17, HP17, HP18, HY20, HTCW17, HTCW18, HLC17c, HLC19, HWW+20]. **Blockchain**

[HHO+21, HSX+21, HW16, HS19b, Hul17, Hur16, HM19, HP19, HRF17, IPS17, IGRS16, IK19, JB17a, JB17b, JB18a, JB18b, JMK+17, JL17, Jas18, JBK+19, JGL+20, JNWS19, Joh18, JJ21, Kab17, KDS+20, KBBTT20, Kad18, KFN+17, Kan20, KAP20, KKK16, KJ17, KJ18, KKd20a, KXXS21, KLZ+21, Kla19, KET+17, KUE17, KUE18, Koe17, KVP21, KAKC20, König20, KFR18, Kri19, Ksh17a, Ksh17b, KV18, Ksh20, Kue18, KVL19, KFTS17, KGK+20, Kuz19b, KK17b, LLLH+20, Las17, Lau17, LLI16, LLI17a, LMG17, LM20, LLLH20, LQY19, LMH16, LN17, LMR17, LTL17, LZY+17, LAB17, LW+21, LFZ+21, LST+17, LL18, LSM17, LHZ+21, LP17b, LPW17a, LP17c, LP18a, LPW18, LP18b, Liu16, Lui19, LHH+20, LLP+20b, LGGBt21, LX17, LSZ+21, Lus18, Lui17, MHL20]. **Blockchain**

[MZLW20, MMR16, Mah18, Mai18, MKY+21, Mal18, ME17, MMH+16, MSC15, McC18, MCLH19, MCS+21, MZXW21, Mer19, MCJ17, MHW16, MK15, Mis17, MMR+21, Moh19, MFR+21, MRR+20, Mor17a, Mor17b, Mor17f, Mor17d, Mor17c, Mor17e, Mor17i, MZ19, MG17, MGDEK17, MGDEK18, NRP+20, NNG19, NAr19, NGS+19, NSN17, ND20, NT21, Nia19, aNOE17, NHIS17, NML19, NYZ+20, NCS17, Not19, OO19, OOF+17, OA17, Ô16, O17, OEO16, OEO17, ÖY17, PPR+20, PK19, Pan18, PSS17, PS17, PTR17, PTR18, PZZ+20, Pec17a, PL16, PS16, Per17, PB18, PP16, PIl16, PS18, PPMT17, Pou20, PRO+18, QFLM17, RGB20, Raj18, Raz19, RC16, ROH16, RKT19, RFM+18, RBB19, Rin18, RSL17, RBL+17, RE18, Rou18, RDL+20, RKY+20, SPJ+17, SNM17, SD16a, SDT17, SLS20, STG+20, SBA21, Sch19a]. **Blockchain**

[Sch19b, Scr18, SS17a, SRB20, Ses18, SG19, SBHD17, SYK17, SJB20, SD16b, SFY21, SW21, SJZG19, Shl19, Shu17, Shu19, SW17, SFMC21, SL18, SV19, SRP20, SNK20, SPZ+20, SC20, SL20, Smo18, Son18, SCZ+21, SJSY21, SGD17, SZ17, Str18, SSSJ19, Suk19, SYZ19, SXZ+21, Sup16, SS17b, Sve17, Swa16, SYS18, Swe16, Tac17, TADS20, Tam19, TSY+21, TT16, TTC16, TT17, TNM17, THF17, TS20, TDOM21, TSL+17, THF121, TBY17, TMTB19, Und16, Via16, VSE21, VMMA17, VFS+19, Vü16, Wad18, WHI+21, Wal18, WDLS17, WLX17, WXH21, WCL17, WMD+20, WLZ20, WCX21, WMG+21, WXR+16, WWZ+20, Wer18, Wey19, WLS17, WLSZ17, WA15, WM18, WK19, Wu17, WDS21, XJY17, XZL20, XRW17, XJR+17, XAZY17, XLM+17, XZK+17, XCG+17, XSC+17, XAZY18, XRS+19, XWL+19, XZY+21, YMR18, YKJK21, YPFY21, YCX19, YYN+20]. **Blockchain**

[Yan21, Yew18, YW18, YLZ20a, YWJ+16, YLZ+20b, Zan19, Zei16, Zha19, ZXL19, ZLT+19, ZG16T, dKW17, dORM+20, vM18, AHSZ21, AC19, ABB+19, AHH20, ASB+21, Álv18, AB20, AAE19, And18, AHC+21, Ano16a, Ano21c, Ano21d, Ant20, BYR+20, BTF+21, Bar16, BJ20, BF17b, Bolt18, Bre17, BF20, CZ16, CG20, CXLC18, Cha18, CLS19a, CW20, CLS+19c, CLH+20, CCH21, CPSGAA20, DB+21, DSI+17, DXW21, DAGK20, DMR19, DKJ19, DLK+21, DGP20, EAV20, FSY+19, FBL+20, F19, FH+19, FZC+20, FCH21, FD20b, FR+19, GS20a, GLF20, GGDK20, Gir18, GK17, Gop19, Gon17, Gra20, GH17, GLW+20, GLY+21, GHG+21, GRHS20, HHBS18, HRC19, HRC20, HSGY20, HGDD20, HYL21, HYLY19, HLC+17b,
Blockchain

Blockchain-Driven [HSB17b, HSB17a, HSB17d, HSB18f, HSB18b].

Blockchain-Empowered [HWCL17, LWL+21, TSY+21].

Blockchain-Enabled [AAA020, DCZ+21, Du21, KV18, Las17, LQYG19, LN17, MZLW20, BKM+17, CGC21, FYZ+21, NML19, MRG18, MLTT20, MFE+20, YPDC20, ZWX20a, ZZW+21].

Blockchain-enhanced [HZL+20].

Blockchain-LI [YNS16].

Blockchain-Ökosysteme [Stol17].

Blockchain-oriented [IPSP17, PPMT17].

Blockchain-Powered [QFLM17].

Blockchain-supported [BAR21].

Blockchain-Technologie [DF17b, DF17a, HP17, HP18, TNN17, BP17b].

BlockchainDB [EHBA+19].

Blockchain [Lei16, LTWM19].

Blockchain-aided [AC19, Sko19].

Blockchain-as-a-Service [Yew18].

Blockchain-assisted [ARL20].

Blockchain-Based [AVA21, ABL18b, CGLR19, CMT+21, DFKU20, GSF+20, HM19, HRF17, KET+17, KUEE17, KUEE18, Ksh20, LWY+19, LLP+20b, LX17, RBB19, RBL+17, Ses18, SW21, Shi19, SL20, SGDT19, WMG+21, WLSZ17, XAZY17, XAZY18, XWL+19, YW18, BAJ20, BLS17, CLT+20, CIA+19, CJW17, DMSCA20, HLC19, HSX+21, HS19b, JMK17, JGL+20, KBT20, LL16, LL17a, LM20, LH16, LST+17, LHZ+21, LHO+20, LSZ+21, MHL20, NSN17, NT21, ÖY17, RGB20, SBHD17, SSSJ19, SYZ16, TMBT19, VMMA17, WMD+20, WCXX1, XWW17, XJR+17, YJKK21, YCXX18, YLZ+20b, AHSZ21, AHH20, BYR+20, FSY+19, HHBS18, HLYL19, HZL+20, IFD+19, JLV+19, KOM+20, KAK21, KUE17, Kra15, Kra16a, Lev17, LLCH21, IWA21, LHH+18, LQZ+20, MZA+20, Mei19, MNB+17, MFE+20, MGE20, MKS+19, NPB+21, NVE+21, NQ20, Nor17a, Nor17b, Nor17c, OHJ20, OdVP20, PL20, PSH20, PWH20, QHNL21, QNM+19, RS21, RWG21, RLQ+21, Rot17, RDD19, RDC+19, RSJP19, SGMM20, SJ19, SJ18, SL19, SSL+19, SK18, SCP+20, SKo19, Sto20, Sub18, SYCC21, TYY+19, TBB21, VDVC21, VG20, Wai19, WCX16, WDL+18, WHA+20, WLC+20, WSC+20, WCZ21, WHY+21, Wat17, XLL+19, XHT20, XLL+21, YZL+19, YCM202, YLD20a, YYDC21, YPDC20, YSD+20, YL20b].
HM16, Her17, Her19, KD20, LSDK17, LDH17, LNZ+16, MDAP16, MAP16, MBC17a, MWV+18, Moh17, NMH16, O’C17, Pec17b, PdWWS16, RM19, RBS17, Six17e, Spo17, SDK+17, Vuk17, Web21, Yer17, ZZJ17, van20, Ano18a, BHMB21, BANT20, CV18, Cro18, EHBA+19, FD20a, HZLH19, LLZY20, MTR+21, Nor17c, SKA+20, Vra17, WSL+19, WM19, WZW+20, Xu16, ZAE20, PdWWS16, RBH17, [Gal18].

[102x634]HM16, Her17, Her19, KD20, LSDK17, LDH17, LNZ+16, MDAP16, MAP16, MBC17a, MWV+18, Moh17, NMH16, O’C17, Pec17b, PdWWS16, RM19, RBS17, Six17e, Spo17, SDK+17, Vuk17, Web21, Yer17, ZZJ17, van20, Ano18a, BHMB21, BANT20, CV18, Cro18, EHBA+19, FD20a, HZLH19, LLZY20, MTR+21, Nor17c, SKA+20, Vra17, WSL+19, WM19, WZW+20, Xu16, ZAE20, PdWWS16, RBH17, [Gal18].


Categorization

[HGDD20], casino [Ano21b], Casinos [Mat13, Pia16], Categorization [GDP+17], Catena [TD17b], Caterpillar [LPGBD+19], Causality [Unv21], CBDCs [JZ21], CBT [GANAHHL17], CCS'17 [ACMI17a], CDN [AC19], Cecoin [QHW+20], censors [RS21], central [Nis16a, Son14], Centralised [Lei16], centralization [BS15], Centralized [KAKC20, WSZN18], Centrally [LDH17], Centric [ACC+17, Hul17, LQZ+20], CEO [Sid14], Certificate [KKM19, XZK17, AHSZ21, CCMN17, LCB17], Certificates [Muf16], Certification [KLR+17a, KLR+17b, Wey19], Certified [AFMDM14], CertLedger [KKM19], CFO [SL20], Chain [BAR21, Con14, HSBI7b, HSBI7a, HSB17c, HSB17d, HSB18a, HSBI8b, HSB18f, HSB18e, HSB18g, HSBI8h, HSB18i, KrI19, Nia19, RKI19, WCI17, Wu17, XRS+19, XZY+21, YPFW21, Che18, DF17b, GS20b, MFE+20, NNGV19, PB17, SCZ+21, SYCC21, FY19], Chaining [ET17], Chains [GKL17, JSK+17, Alv18, AHC+21, Ler14a, SZ13], Chaintegrity [ZWX20a], Challenge [Tzi18, IWA21, MLY120], challenge-based [LWA21, MLY120], Challenges [ACMI17c, BGM20, Big20, BMC+15, CDZ+20, CCA+20, DCC+21, DPD+21, EBD+20, HHK18, HJ15, HJS16, KAKC20, KGTK20, LZD21, MWV+18, Mul14a, Nav17, PS16, PPM17, RDDL17, SK17, Van14b, dCdCM14, ACA+19, And18, FFL21, GGDK20, HRC19, HYL21, JCG+21, KSI18, MKY+21, MAAN19, MCLH19, SPZ+20, SJSY21, VDVC21], challenging [VC15a, VC15b], Chancen [Ker14, San14a], Change [FWB15, KRL17, Mor17c, Kel15, Pec17b], changing [Pal18, TT16, TTCC16], Channel [AGGM16, BDW17, EKK+17, MMSK+17, RLT17, TWFO20, ECA+21, ZLL+19b], Channels [ABF+16, DW15, GM17, Kra16b, NT21], Chaos [LB18], character [MLTT20], Characteristics [KLDS20, WLXC17], Characterizing [GCL16, MPJ+13, MPJ+16], charging [HZLH19, KUE17], Charles [G17], chart [Pec17a], check [Pal18], checking [WHY+21], Checks [YWS+18], Chemotherapy [Shu17], Cheque [SV19, KBT20], China [CP17a, K.13, RS21, Son14, Sto20, Unv21, ZZ16], Chinese [Son14], Choice [Kan18], choices [KVP21], Choosing [Dre17d, WK19], Christ [BBMS14, CSN14, CMR+16, GP17b], Church [BBMS14, CSN14, CMR+16, GP17b], Cisco [Ker18a], Cities [IPS17, LHZ+21, Mis17, SNKG20, CGC21, MKY+21, MZA+20, MLTT20, Pou20, Sto20, SYZ16, Ser21], Citizens [Chi18], City [De18, KAP20, ZWH+20], CitySense [IPS17], civilizations [DS17a], Class [BW17], Classification [TT19, GDA+21, SKG12], clearance [KBT20], Clearing [SV19], Client [BC16a, XCG+17, JLX+19], Clients [BKP14, G CKG14, McK19, VCLK17], Clinical [ACV17, BR17], clipboard [Pal18], clipboards [Bar18], clock [FSY+19], cloning [KOJ+20], closed [LZDA16], Closure [MCS18], Cloud [BJ20, ECDO17, HS16c, JWNS19, Kue18, LQYG19, LST+17, Mal18, RBB19, SJB20, SV16, SL18, SL20, TSL+17, ABB+19, HZY+19, HZL+20, HXZ+21, JO13, KGTK20, MRG18, RQM+21, WWZ+20, WLL+13, YCX18, YLZ+20b, ZWGC19], Cloud-Based [HS16c], Cloud/Fog [JWNS19], Clouds [KZVT17, MKGT16a, MKGT16b, TVK+20], Clustering [EZ17, EZ18, EPY17, FOA16, NH17, HLC+17b, Sal18, Urq17], CMOS [KPP+20], Co [BIO18, GR17, BBBB15], Coalitions [MKKS14, MKKS15], Code
[FB17b, KOJ+20, SCAA13, DW18, Ger16].

Codes [LSO+15, Pie20]. Coercion [Dim20].

Coercion-free [Dim20]. Coexist [GP17a].

Coffee [ECHL16]. Cognitive [SKA+20, Che18].

Coin [Ale18b, IPI+18, KPW19, KJGW17, RMSK14, Goo18, DFKP13, THF17].

Coinbase [KRL17, Far18b, GCD16].

Coincheck [YWS+18, Gal18, Nak18, WREK18, WSZN18, YWW+18]. CoinDash [Osbi8a].

CoinDesk [Sup16, Vig15].

CoinParty [ZGH+15]. Coins [Ros12, RKS15].

CoinTerra [BH15, BHI+14]. Collaboration [NOT15].

Collaborations [Chi18]. Collaborative [RBL+17, SGDT19, And18, LTMW19, LWA21, MLYL20, MGE20]. Collapse [K.13, Sch14b].

Collateral [KT15, MB17]. collected [Cha14]. Collection [IM16, KPP+20]. Collisions [Lar13].

Collusion [YTLD19]. colony [DXW21].

Colored [Ros12]. Column [Wel18].

Combat [DN93]. Combining [Raz19].

ComboJack [Bar18, Pal18]. ComChair [VG20]. come [Ker18b]. Comments [Sar21].

Commerce [DCZ+21, GWF+21, Pan96, SXZ+21, XLM+17]. Commercial [Ger16].

Commissioning [HS16c]. commit [EAvm20]. Commit Coin [CE12].

commitment [CS15, ZAE20].

Commitments [CE12]. committee [LLZY20]. committee-based [LLZY20].


Communication [Alz19, BLSD17, FDT17, FF17, WCL17, vdhEM+17, AR15, HZL+20, LCB+20, YYDC21].

Communications [ACM17a, Bra13, CGC21]. Communities [Bel18, WXH21, ACA+19].

Community [Kee16, RRM18, VGJ15, BB14]. Compact [SBRS16, SALY17]. Company [SLS20].

Comparative [SL18, DSM+17].

Comparing [Kön20]. Comparison [CTMI9, SCAA13, GDA+21, Kat17].

Compatibility [SBBR17, ZGR17].


Compliance [CedO17, HV20, Lyn14].

Compliant [Ban18]. Components [SD16a].

Composite [BMTZ17, JKKX16].

compraventa [HA15]. Comprehensive [RMS17, SRB20, NBF+16].

Computation [CGJ+17, DCZ+21, ET17, EL14, KB16, KVV16, LSP+15, BHH19]. Computational [HWCL17, SC20, Li14a, Li14b].

Computations [ADM14a, ADMM14, KB14, vdHKZ14, ADMM16, Bee16, HCW+18].

Compute [But13a]. Computer [ACM17a, LTKS15, Son16a, Wör16, vO20].

computers [Goo18, Hol18]. Computing [Bee18, BS20, BATB20, DMH18g, Her17, JWNS19, Kue18, LQY19, LSH13, TMTB19, We18, Fin17b, Her19, HLC19, HS19b, IFD+19, KAP20, KGS+19, LZD21, SLG+21, ZZW+21]. computing-based [KAP20].

concentration [LP18c, LP18d].

Concept [HSB17a, HSB18e, Shu17, SDK+17, AC19].


Conclusion [HSB17b, HSB18f, Mor17g].

Concurrence [DGHK17, Kad18, MMSK+17, WB17].

Concurrency-Related [WB17].

Concurrent [OR17, RLT17, XYZ+21].

Condensed [JW16a]. Conditional [FYZ+21]. conditions [GKJ+18].

Conference [ACM17a, ACM17c, GP17b, Ker12, OF15, Sad13, IJKY05, Jue04].

Confidence [MG17]. Confidential [CZJ+17, NMt16, RMS17]. Confidentiality [OR17, ZHC+20].

Confidentiality-Preserving [ZHC+20].

Configuration [WK19]. Configurations
SIDV14, UJ16, Sko19. Cyber-Physical [CGT+21, LSZ+21, NVE+21, Sko19].
Cyber-physical-Social [FYZ+21].
cyberattack [BAR21], Cyberattacks [Koe17], Cybercrime [ Vas17].
cybercriminal [Esc18, Fir18].
cyberphysical [AAAO20, BATB20, BLKD20].
cybersecure [Ser21]. Cybersecurity [Fug19, Mal18, DSM+17, MRG18, SLG+21, Gou19].
cybertrust [Ksh18a, Ksh18b].
cycle [SW17, Tro14a, Tro15b]. cycles [HDM+14, Tro14b]. Cycling [JMK17].
cyfer [Gou19].
D&R [Li14a, Li14b]. D2D [HWCL17, YYDC21]. D5 [OA17].
dada [ZWH+20]. DAG [ZWH18]. DAG-based [ZWH18].
Dagger [But13a]. DAGsim [ZWH18].
DAML [KF19]. Dance [Bhe17c].
Dandelion [VFV17a, VFV17b]. DAO [DMH18e].
Dank [KCD17]. Darkweb [GDP+17].
Dashcam [WBK+17]. Dashcams [WBK+17].
Data [AS18, ACW17, ARBK17, ADA17, AVA21, ACV17, AAD+21, ARK20, Ban18, BBGP19, BKS19, CGLR19, CSN14, DCK17, DMR18, Dre17g, Dre17i, Dre17n, Dre17t, Dre17y, ET17, ECD017, EG17, EN19, FBHS19, FHS+17, Fug19, GWF+21, Hul17, ISM17, JRB+17, Kan20, KMMW17, Ker12, LS17, LL17b, LL17c, LWL+21, LST+17, LHZ+21, Liu16, LGGB+21, Mai18, MJS+14, Mis17, MBC+17b, Nar19, NSNF17, RR17, RDL+20, Sad13, S171T, SBHD17, SV16, SLY15, Spo17, SYS18, TD17a, THF21, TSCT18, VMMA17, Web21, WvB14, Wnr16, XAZY17, XAZY18, XWL+19, YW18, YWJ+16, ZCC+16, ABB+19, BHH19, BBMS14, BP17b, BCJR5, CLS19a, CSLD17, CLH+20, CMR+16, DUPSNAH20, FBL+20, Far18b, GLF20, Gir18, GP17b, HZY+19, HZX+20, JZLL17, JO13, KTM+21, Lee15, LFX+20, LML+19, MHL20, MZA+20, MBK+21, Pal18, RWG21, RCD+19, SM20, Six17a].
data [WMD+20, WLZ20, WHY+21, WWZ+20, YCX18, YLZ+20b, ZNX+21, ZWGC19, GANAHH17]. data-based [WWZ+20]. Data-Centric [Hul17].
Data-driven [DMR18, LWL+21].
data-level [CSLD17]. Database [DHES16, WB17, EHBA+19, NGS+19].
Database-Backed [WB17]. Databases [AAG17, FYK+17, Moh17, BANT20].
Datacenter [MKG16a, MKGT16b, TVK+20].
datastore [RST11]. Daten [Six17a]. Datenschutz [PB17].
datenschutzrechtliche [BP17b]. Dating [CE12]. David [Lut17]. day [Fir18].
dbFT [CCA+20]. DDoS [JLG+14, RBL+17, RBS17].
De-Anonymizing [DS15]. Dead [BR16].
deadlock [NQ20]. DealBook [A018j].
dealing [K.13]. De-anonymisation [BKP14].
Decent [Bhe17c]. Decent [Bhe17c]. Decent [Bhe17c].
Decent [Bhe17c]. Decent [Bhe17c]. Decent [Bhe17c].
Decentralised [BCM16, Laut11a, Lei16, P’16].
Decentralization [CVM17, EBHBL16, BHMB21].
Decentralized [Aut21, BSCG+14, But13b, Cou13, CDE+16, DMH18f, DGP17, DGP20, Eva14, FR16, FBL+20, FY19, FDT17, FF17, GH05, GKČČ14, GM17, HTCW17, HTCW18, KET+17, Kral16b, KMB15, LWY+19, MBC+17b, Mue18, Mul14b, NOT15, Not19, Pas15, RGB20, RMSK14, SCG+14, SXJ+20, SGF+17, Shi19, SV16, Sub18, Tam19, TS16, Voii11, YPFY21, Zoh17, ZZJ17, AB20, BAJ20, BS20, Brel17, GLF20, GPP18, HHS18, HSGY20, JLG+20, JZLL17, LFX+20, QHW+20, RK19, RSJP19, Woo14, XJR+17, ZMH+17, ZMH+18, CGT+21].
Decentralizing [Hal17]. decidable
[PLSS17]. Decision
[Las17, Moh19, FZZ+20]. Decisions
[EGB18, KUE17, KUE18, KUE17]. decoded [CM14]. Deconstructing [Ros03].
DECOR [Ler14a]. Decoupling
[DMO+19, IM16]. DecReg [aNOE17].
Deep [BNMH17, FYZ+21, GR17, LPSP20, NMH16, GS20b, NVE+21, UJ16, XLZ20].
Default [NTKS17]. Defense [ZP17b].
Defenses [CPNX20]. Defined
[AK17, SD16a, YPDC20]. Defining
[CM14]. Deconstructing [Ros03].
Declarations [CM14]. Deconstructing [Ros03].
Defrauded [Lew15]. Degradation
[ABF+16]. Delay [FOA17, SA17, FOA17].
Delays [RFM+18]. Delegatable [落Z17].
decision [YCX18]. Delivery
[GDTP17, BHMB21]. delivered [Pal18]. delivering [TF16]. Delivery
[GRKC15, ZLT+19]. demand
[DB16, Per20]. Demo [SZJ17, ZZJ17].
Democracy [QFLM17, Mea19, Pou20].
Democratic [KH16]. Demonstrating
[FF17]. Demystifying
[Ano20, CD20, LTKS15]. Denial
[BAR21, SGTZ19, VT14, Bac02a, Bee16].
Denial-of-Service [VT14]. Dense
[SYK17]. Dependability [BBGP19].
Depends [Smo18, RS21]. Deploy [Raz19]. Deploying
[BGSAS17]. Deployment
[ECHL16, FSW14]. Deposit [BZ17].
Deposits
[ADM14a, Ano18]. Bee16, YSLH17, YTL19].
derivation [Per09]. Derivative [BKT17].
Design [All19, BK14, BLSD17, CLS19a, EGB18, Fot17, KLZ+21, LLHW20, Lin15, LLP+20b, MAQ99, SK17, Wör16, NGS+19].
Designated [WHJ17, WHJ20].
Designated-verifier [WHJ17, WHJ20].
Designed [Li14a, Li14b]. Designing
[LTMW19, NST+17, Uiri17, VGJ15, XLL+19].
Designs [BABD17, TBB21].
despite [PB17]. Destruction [Con14]. detailed
[ARK20]. d’État [MK15]. Detecting
[AGGM16, WZS19]. Detection
[Bog17, CPL+21, DH17, LZN+17, MMT16b, RRM18, SGTZ19, CEW15, KTM+21, LW16, LTMW19, LWA21, MLYL20, MGE20, MMT16a, VD17, WLZ20]. detections
[CZ16]. detector [SQ20, XGS*20].
Determining [KRL17, Sbr18].
Deterministic [DCK17, GSV15, WGL19].
Deterreg [KT15]. developed [AR15].
Developer [Ano17b, Nor17b]. developers
[Lee13, Per20]. Developing
[Ano18g, BBH18, Lim18, FRUS17].
Development [AKP17, AKP18, Ant21, DSN17, HS16a, Lei16, Bra15a, VDVC21].
Developments [BMH18k]. Device
[LGGB+21, LHL20]. Devices
[HS16c, LMWL17, ÖY17, Ses18, TSY+21, FMR+19, HYLY19, HCW+18, LL16, LL17a].
dezentrale [Six17e]. Dhab
[ACM17a, ACM17b, ACM17d]. diced
[Nic17]. Did [RS14]. Dies [McK19].
Dietcoin [FMR+19]. Difference [Nis16b].
Differences [Mul14e]. Different [Mer19].
Differential [HBR20]. Difficulty
[AKL17, Kra15, Kra16a, MCJ17]. differentiation
[YS20]. Digital
[AKP18, ACV17, BBM+18, Cha81, EL14, Gevi6, GK14, GANT21, Gri11, KT15, KKS14, LPSZ18, Mer88, MK15, Mor17h, NAV17, OZ16, Pav18, Pop15, Pop16b, RBB19, Rin18, Scz18, Sk20, Skmo18, Spr13, Sw16, TS16, Vd16, Wer18, Ze16, Bar18, BHS93, BGPW16, CJW17, CRdK16, DGP20, Gon17, Goo18, HS91, HS16a, Ker14, KH16, Lee15, LCH21, Pan96, RBM17, RSJP19, Sh19, TF16, Uri17, VC15a, VC15b, YL20a, AKP17].
digitalen [HF14]. digitaler [RBM17].
Digitalization [Sch19b]. Dilemma [Eya15].
Dilemmas [KS1+17c]. dimension
[CLS19b, CLS20]. Dimensions
[JB18b, BHMB21, Hal18]. Diplomacy
[Ber17]. Directed [RJK+17]. Directions
[DH16, HHHK18, KAKC20, PMT17, Son16a, HRC19, JCG+21, KGT20].
Diritto [MS15]. Disambiguating [Dre17e].
Disaster [Pan18]. disclosure [BEM+20].
Discontinuity [TSCT18]. Discourage
[MMK14, MKKS15]. Discovering
[Dre17f, EZ17, EZ18, TSCT18]. Discovery
[ACW17, LWZ+21, MBT19]. Discuss
[FF17, WXH21]. Discussion
[Ali15, HSB17c, HSB18g]. Discussions
[WXH21]. Disincentivize [ES14a]. Disk
[GL00]. dispensers [MTR+21]. Dispute
[BT18a]. Disputes [ABL18b]. Disruption
[BBBB15, DTM20]. Disruptive
[ACW17, LWZ+17, MGM].
Domain
[MZLW20, MGM].
Distribution
[ALPBT17, AKGN18, Ant21,
AABM17, Brü17, CZJ+17, EGB18, ECdO17,
Eti19, EG17, HL16, HLC+17a, Her17, Hül17,
JCHSR16, KLDS20, KMOD17, KVV19,
LDWS17, Lau11b, LS17, LLW17, LSP+15,
MZLW20, MGM+17, Mei18, MGGR13,
NST+17, Poe14, RSJ21, RBB19, RLT17,
SD16b, SW21, SGD19, Str18, TD17a,
VCP20, VRK21, Wat17, Wel18, Wu17,
YLC20a, ZWQ+16, BS15, BANT20, CK16,
CH19, CHL19, FFL21, FD20a, Her19, KF19,
KTM+21, MKS+19, MCF20, MVM21,
PLSS17, SK20, ZWH18, dORM+20].
Distributing [Dre17g]. Distribution
[Yeo15]. diversification [BOS15]. Divide
[Bra13]. Divisors [DDX17]. DLT [Spo17].
DLoc [ECdO17]. DLT [FFL21, Lim18].
DLT/Blockchain [Lim18]. DNS
[HSGY20]. Do
[Pec17a, SIDV14, WXH21, Kug18]. Docker
[XJR+17]. doctrinal [HA15]. doctrinarias
[HA15]. Document [PPR+20, HS91].
Documentation [Ano17b]. Documenting
[Dre17a]. Does [HSB17c, HSB18g, SGFI+17,
Ste17, Ano17d, Fai17, RE18]. Domain
[JB18a, WXH21, LZZ+20, PK21, RBS17,
YS20]. domains [ARL20, AAC+19a].
Dominant [AC17]. Done [BSLM20]. Don’t
[JBK+19, MHH+16, PaI18]. doors
[LZDA16]. Doppelganger [KKS+17b].
Dormancy [Smi18]. DoS-resistant [Voi11].

Double [DNY17, KAČ12, KAR+15,
LZC+17, NT21, aNOE17, PSDSNAHJ19,
PR16, DB16, RWG21, YSLH17].
double-blockchain [RWG21].
Double-Financing [aNOE17].
Double-spend [PR16]. Double-Spender
[DNY17]. Double-Spending [KAR+15,
LZC+17, KAC12, PSDSNAHJ19, YSLH17].
Down [Son14, Vit15, Zet13, Sha17]. DPM
[GANAHHJ17]. DPS [FF17]. DPS-Discuss
[FF17]. Drain [VBC+17]. Draw
[Ano18m, Ole18]. Dread [RS14]. Dreamers
[DMH18a]. Dreams [Eya17]. Dredas
[FBL+20]. Drive
[BK17a, BK18, KPW19, Seg18]. Drive-by
[Seg18]. Driven [DCZ+21, HSB17b,
HSB17a, HSB17d, HSB18f, HSB18e,
HSB18h, DMR18, LWW+21, LTW+21].
Drivers [PZZ+20, GDA+21, KVP21].
Drives [Snu18]. Drones [SYK17]. Drug
[Zet13, Gei16]. Drugs [STG+20]. Dry
[LJG15]. DSA [GGN16, GGK+14].
DSA/ECDSA [GGN16, GGK+14]. dual
[LYW+21]. dual-blockchain [LYW+21].
Dubai [Nor17a]. Dubious [Roo18]. Due
[Ari16, McL13]. dumber [Ito18]. dummies
[Ant16]. d’une [San14b]. Duplex [DW15].
Duplication [KKS+17b]. during [Osb18a].
Dutch [PdWWS16]. dwelled [UJ16].
Dynamic
[Lin21, AB20, Bar17, DB16, KUE17].
Dynamically [KJ17, KJ18]. Dynamics
[EIDS15, Bla18, GK17, Gon17].

E-Cash [GGN13, BB15, Nak08b].
e-Cheque [SV19]. e-Commerce
[DCZ+21, SXZ+21, XLM+17, GWF+21].
e-Democracy [QFLM17]. E-Government
[QFLM17]. e-Government [OJ17].
E-health [BJ20]. E-Health-Care
[BSLM20]. e-Healthcare [IFD+19].
E-Voting [HTCW17, HTCW18, KV18,
KAK21, KAK20, ZWX20a]. Early
[KD16, Mul14g]. earned [Tun18]. Earnings

eCommerce [MFR+21]. Economic [BHMb21, Bon16a, DaFP18, EKK+17, Eva14, Hal18, MLD19, Nav17, Pav18, CRR18, VC15a, VC15b, VCS03]. economically [KDS+20]. Economics [Bhe17b, BCEM15, CG16, Fra14, HS16d, Hou14b, Ker18a, KLZ+21, KD20, Rec19, Ant20, Bar16, CG20, HS16a, KDF13].

Economies [MDAP16, MAP16, Son16b].

Economy [BDP+17a, Bhe17c, XSC+17, Har17, LP18c, LP18d, Sir16b, Swa15b, TKW15].

Ecosphere [Six17a, Six17f]. Ecosystem [Cus14a, GHMO17, GDF+17, Kab17, Son18, VTM14, Cus14b, DMH18b, HVM+18, MBR+13b, MBB13a, YV17]. Ecosystems [SW17, Sto17].

Edge [BS20, Du21, MMR+21, SD16a, TMTB19, HVM+18, HZL+20, JAK+19, KAP+20, YLZ+20b, ZZW+21]. edge-as-a-service [JAK19]. edge-cloud [YLZ+20b]. Edges [XWL+19]. Editor [WR16, Wil17, WR18].

Editorial [CCH21]. Education [Jas18, RRD17, SL17, CXL18].

Educational [HRE17, SD16b, ZK+17].

Edward [Azo16c, SM-16]. Effect [Lin21, NC17a]. Effective [MCD15, LML+19]. Effects [Bai19, MG17, OOF+17, KCS+14].

efficiency [BHS93]. Efficient [BD19, DS17b, Dim20, FYK+17, JKKX16, Lau11b, MIWK16, PHH+20, RAH+15, RM19, TD17b, XZK+17, XCG+17, XWL+19, BRY+20, CM19, CLH+20, ES16, FBL+20, GLW+20, GLY+21, HYLY19, HZL+20, KW20, Lau11a, LLZ+17, RCD+19, RSJP19, VD17, WDL+18, YYDC21, ZL+19a, ZL+19b, MRR+20].

Effing [MSC15]. Effort [Coe08]. Efforts [Nar19].

Egalitarian [Su20]. eGose [ACM17c].

eHealth [DXR+17, HSX+21, HP19, SDT17]. eHealthcare [WH+20], EHRs [HSX+21].

Eigentumsrechten [HP17, HP18].


electric [KUE17, ZW15, ZW17]. electricity [Fai17].

Electronic [ACM17c, Ano17a, Cha81, Hut17, Ksh18a, MY11, Nar19, OO91, PPR+20, Shu19, CLC+19, Nak08a, Pan96, SHL+20, Sub18].

Electronics [XRS+21].

Elctrum [VCLK17]. elements [Uri17]. ELIB [MRR+20]. eliminate [LLZ+17], elliptic [WHJ17, WHJ20]. Elon [Sha17].

emails [Pal18]. Embedded [IK19, LMQ17, LL16, LL17a]. embrace [Cae15]. Embracing [And18].

Emerging [ACW17, Bia19, But19, Du21, KD16, TDOM19, Son16b].

Empirical [JL17, KAK21, MC13, VTM14, Vel16, WLXC17, CF15, CAMS20, DSB+21, BBB+15, NPB+21].

Empower [DXR+17]. Empowered [HWCL17, LWW+21, TS+21, WLZ20].

Enabled [AAA+20, BD19, DCZ+21, Du21, KV18, Las17, LQVG19, LN17, MZM19, Mal18, SS17b, XRS+19, BKM+17, CJA+19, CGC21, DMH18b, FYZ+21, GLW+20, JAK19, MRG18, MBK+21, MLTT20, MFE+20, NVE+21, NML19, SRP20, WLZ20, YPD+20, ZWX20a, ZZW+21].

Enabler [CBWF17, SS17a, CDC+19]. Enabling [ABL18b, HGDD20, IK19, LLJ21, Nar19, Otn16, WZM+20, XSC+17]. Encrypted [AAG17, DCK17, FYK+17, GWG+21].

Encryption [DDX17, FYK+17, LLW17, Mer88, CLC+19, MBK+21]. End [BMSS17, BMSS19, MBB+15, Roi13, Rot17, PK21].

End-to-End [BMSS19, BMSS17, PK21].
Endorsement [MBT19]. Energy [AAA020, BD19, EBD+20, LDWS17, OO19, PW17a, Pop18a, WMG+21, CJA+19, DLK+21, Fai19, GLW+20, GLY+21, JAK19, Kug18, KGTK20, MNB+17, MMMV21, OM14, TKW15]. Energy-Efficient [BD19]. 

Enforcing [Zei16] engine [LPGBD19, SSSJ19, WDL+18]. 

Engineering [CS20, Fra14, LP20, Nia19, Not19, PPMT17, SL20, Sve17, TODM19, Bar16, CLS19b, CLS20, LTW+21]. 

EngraveChain [SW21]. Enhance [SOA17]. 

Enhanced [CC16, LST+17, XJY17, HZL+20]. 

Enhancements [CCA+20]. Enhancing [BBGP19, CP17b, MO15, MLY120, WA15, Heal13]. enigma [Nis16a]. enormous [Fai17]. Enough [ES14b, GLD+18, ES18]. 

Ensemble [LPSP20]. Ensuring [Ano21c, SHL+20]. Entangled [JB18b]. 

Entreprise [DTM20, Mor17a, dKW17]. entire [Nic17]. entities [YV17]. 

Entrepreneur [IM16]. entrepreneurship [NC17a]. entropy [PW17b]. Entwicklung [FRSU17]. 

Environment [LST+17, ABB+19, JAK19, KK17b, LL16, LL17a, Li14a, Li14b, ML20, WLL+13, YL20b]. 

Environments [Mer19, VFS+19, HSX+21, LTWM19]. 

EOSIO [HW+20]. EPBC [XCG+17]. 

EPR [PLSS17]. Equihash [BK17b]. equity [ZZ16]. 

Equivocation [RKS15, TD17b]. era [dS17a]. Erasing [FBHS19]. Erratum [Ano18g, ZFY17, ZDL17b]. Errors [JS20]. 

erste [SKG12]. escalation [FTS+20]. 

Escrow [WLY17]. ESORICS [GANAHHJ17]. Essays [Kha19, Rec19]. 


Ethereum [ABB18, ABC17, BCCS20, BKT17, BCM16, Bon16b, BO17, But13b, CCMN17, CPNX20, CLZ+20, CPL+21, Dan17b, DMH18g, DMH18m, Fai19, FD20b, GJK+18, Hir17, JCHSR16, JS20, KLM17, Koj+20, LGTS20, LPGBD+19, MB17, ML20, NPS+17, OHJ20, OVS+21, Pie20, Six17g, SOV+21, WZS19, Woo14, XGS+20, ZW+17, ZTJ+21]. 

Ethereum-based [ZTJ+21]. EtherQL [LZY+17]. Ethical [AM15, BKS19, UJ16]. 

EthiKs [Bon16b]. EthReview [ZTJ+21]. 

EU [But19]. 

Eurasia [ACM17c]. 

EUROCRYPT [OF15]. Europe [Ker18b]. 

European [Gim16, LD17]. EV [HZLH19]. 

Evaluating [AKR+13]. Evaluation [ACW17, BAR19, DCK17, Doz18, FOA16, IGRS16, Mer19, Sal18, YPFY21, Ano21d, DCB+21, LLJ21]. evaluations [HGDD20]. 

Evasion [Kar19]. Even [Ler14a, VM15]. 

Event [Hul17, Tac17]. Event-based [Hul17]. 

Events [TADS20]. eventual [Sir16a]. every [Cim19, Fai17]. Every [Kan20, RDL+20]. Everyone [GH17]. 

Everything [Far18a, SNKG20]. 

everywhere [Laz15]. Evidence [DVRM16, LLCH21]. Evil [Kru13]. 

Evolution [FPKH17, KBS17, Kün16, Smo18, Tay17, WL15, CPSGA20, OC16]. 

EVOO [But19]. examination [SCP+20]. 

Examining [But19, KCD17, VBC+17, Uni14]. 

Exchange [CC16, CGLR19, HG15, JMM14, Joh19, MSCH15, Mck19, MC13, MCS18, Nar19, RJK+17, WXH21, Wul19, YSZ+19, Abe18, Cim19, SBL19, Son16b, WHJ17, WHJ20, Ano19a, Cim18a]. Exchanges [DBB+15, DGSW15, Hut17, Son14, WSZN18, K.13]. Exchanging [WvB14]. 

Exclusive [WREK18, MLTT20]. exclusively [CSG+18]. Executing [SCAA13]. Execution [EMEHR17, GBPFW17, SCAA13, WXR+16, LPGBD+19, SSSJ19]. 

Executive [WREK18]. Existential [RS21]. Expected [Sid14]. Experience [Riz16]. 

Experiences [KJGW17]. experiments [Li14a, Li14b]. 

explaining [BW17]. exploited [Fir18].
Exploiting [MHH+16, DMR18].

Exploration [LCL17, SK17, Wey19, BB14].

Exploratory [AH19, BO17, LW16, Nav17, OHHJ20].

explorer [KK17b].

Exploring [CXLC18, EN19, KSCD16, OOF+17, SK15, WL15, Gom16].

Extended [BLMR14, Hu17].

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extension [Bak09].

External [WBK+17].

Extra [But19].

Extracting [SMZ14, YSZ+19].

Extremism [Lut17].

Fabric [BSV17, LLHW20, Lin21, MBT19, Suk19, Vuk16, Yew18, GRHS20, BHH19].

Fabric-Based [Lin21].

Facebook [dSi17a].

Facilitate [NH17].

Facilitative [KCD17].

Factor [ML15, ML17].

Factors [KCD17, PZZ+20, ZDL17a, ZDL17b].

Facts [EDS15].

FaDe [CGLR19].

Failings [Wey19].

Fair [ADM14a, Ast16, BK14, BC16a, CGLR19, CGJ+17, HWCL17, HLC17c, JMM14, MBC+17b, PS17, Pia16, YSLH17, Bee16, DSPSNAHJ20, HCW+18, HLC19, LFX+20, LLZY20, YTL19].

Fair-Exchange [JMM14].

Fairness [CGJ+17, GDTP17].

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falls [Lee13].

Fambit [HRE17].

Far [KVL19, Goo18].

Farming [PTPR17, PTPR18].

Fast [DW15, KAC12, Lin17, LZC+17, SCAA13, SZJ17, SZ13, Uri17, YTL19, VB08].

fast-payment [YTL19].

faster [CEN14, Ler14a].

Fault [BSV17, Cee20b, XZY+21, TYY+19, VG20].

fault-tolerance [TYY+19].

Fault-tolerant [BSV17, VG20].

FAW [KKS+17c].

FBI [Gre13, RS21].

FC [BBMS14, BCJR15, CSN14, CMR+16, GP17b, JRB+17, Jue04, Ker12, Sad13].

Fears [HM18].

Feasibility [JCG17, SL18].

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February [CMR+16, GP17b, Jue04, Ker12].

Federal [HV20, Nav17, Int14].

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Feds [Zet13].

Fee [GCD16].

Feed [ZCC+16].

Feeding [Fai17].

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Feltten [Ano16c, SM-16].

ferenda [Kün16].

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fights [Tun18].

Filters [GCKG14].

Finance [Bhe17d, Edw15, Eya17, HSB17b, HSB17a, HSB17c, HSB17d, HSB18a, HSB18b, HSB18f, HSB18e, HSB18g, HSB18h, HSB18i, TBY17].

Financial [Ami16, Bai19, DMH18, EMEHR17, HRF17, JB17a, JMK17, Ksh20, Nor17c, Rec19, Sch19b, TSC18, And18, GS20b, GS20a, K.13, KBTT20, Lee15, Lew15, LMR17, LP18c, LP18d, Six17d, VX17, WGC19, XLZ20, BBMS14, BCJR15, CSN14, CMR+16, GP17b, JRB+17, Jue04, Ker12, Sad13].

Financing [ano17].

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Findel [BKT17].

finding [Lar13].

Findings [BBBB15].

finds [Aro12, Edw15].

Fine [RCD+19, LHH+18, MHL20].

Fine-grained [RCD+19, LHH+18, MHL20].

fingerprint [HS19b].

FinTech [WM18].

Fintechn [Sch19b].

Fire [RKS15].

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firms [K.13, Nor17c].

Firmware [LMWL17, HYLY19, LL16, LL17a, YL20b].

First [BH15, BP14, DP18, LF16, Pav18, PL16, SDT17, Ano17a, BHI+14, EBSC15, Ker18b, SKG12, YV17].

First-Generation [BH15].

Fishes [ZW+17].

Fistful [MPJ+13, MPJ+16].

fix [Lee13].

FL [Jue04].

flance [Ca15].

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flash-speed [MBD+12].

flaw [Duc13, Fir18].

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Flexible [KXSS21, DKJ19, LTC+19, XHST20].

Flow [BS17a, YK15, HGDD20, QHNL21].

flows [BDP+15].

Fluctuations [EDS15].

Focus [TKW15, PCP20].

Fog [BATB20, JWNS19, LW2+21, SNKG20, TMTB19, HCW+18, HLC19, IFD+19, KG5+19].

Fog-based
AMLH18, BHI+14, MRG18. Genius [Mez19, Gei16]. Genomic [KPK17].
Geospatial [FHS+17]. German [ABR17, Ale18b, Ano16b, Blo18, BP17b, Cap12, Dix17, DF17b, FRSU17, GH17, HP17, Ker14, KFR17, LPW17b, MG16, Möl13, PB17, Pla13, RE18, RBM17, San14a, Six17a, Six17d, Six17c, Six17h, Six17i, Six17j, SKG12, SKG13, Sto17, WLS17].
Geschäftsmodelle [RBM17]. Get [WM18, Cin19, Pec15]. GHash.io [Mat14].
GHOST [KKS+17]. Gibbard [Ano18h].
Gifted [Ro13]. 
giuridica [Cap15].
Giving [Ano19b].
Glimpse [LMLA17, Pav18].
glitch [Lee13]. Global [ACM15, Ali15, MMT16b, MULL14h, Yeo15, CV18, CRdK16, GRHS20, VC15a, VC15b].
Go [BS17a, Fai17]. Goals [AKP17, AKP18].
Going [Dre17u, GCD16].
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Gomburia [Lut17]. gone [Nic17].
Good [AKP17, AKP18, WA15, Bon14b, Ito18, Pla13, RKY+20].
Google [Smu18].
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Governance [ACM17c, Bcem15, KPP+20, Mor17b, QFLM17, ROH16, SC20, Yer17, CV18].
Governed [LDH17, NOT15].
Government [CDZ+20, OA17, Øln16, ØJ17].
Governments [Ch18, Nar19].
grained [LHH+18, MHL20, RCD+19].
Grand [Far18a, Ort16].
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Graph-Based [ZG15].
Graph-theoretic [Tro15b].
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Greater [RS21].
Green [PTPR17, PTPR18, TSY+21, CCMN17].
Grid [ARL20, GH05, KUEE17, KUEE18, ALP15, GLY+21, JAK19, LYW+21, MNB+17, MMMV21].
Grind [JB18a, JB18b].
Grounded [Doz18].
Group [OOF+17, YLZ20a, Tun18, ZLL+19a].
Grouping [NTKS17]. grow [Ker18b].
Growing [JB17b]. grows [SZ13]. growth [CW20, Per20].
Grundlage [RBM17].
Grundlagen [BP17b].
Guarantee [CLJ+21].
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GuardHealth [WLZ20].
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Guide [DTM20, Sch14a, Wal18, BDP17a, BT18b, Mil15, Pro13, Pro14, Wall19].
Guidelines [Ant21, BO17].
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Gyges [JKS16].
Hack [McM13, Nak18, WSZN18].
Hacked [Abe18, DMH18e].
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Hadoop [Li14a, Li14b].
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Handbook [LMC18, Lee15, MG16, OZ16].
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hardening [FMR+19].
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Hardness [SFMC21].
Hardware [BNMH17, NMH16, SNM17, Tay17, WRB15].
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Hashcash [Bac02b, Bac02a, Bac03, Tro15a].
Hashimoto [Dry14].
Hashing [Dre17i, Dre17j, Ler13, LSZ+21, Tro15a].
HCI [SK15].
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Health [BSLM20, DMH18c, SDT17, Shu19, BJ20, CLC+19, SHL+20].
Healthcare [ARBK17, DFKU20, IFD+19, Joh18, Ksh18a, RRD17, YWJ+16, ABB+19, CDS+19, MCLH19, NVE+21, PL20, SJSY21, WLZ20].
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[dre14, Gal18]. held [Uni14]. Help
[MBC17a]. Heterogeneous
[AA20, LTBY20]. Heterotopia [MK15].
Hey [KD16]. Hidden
[EZ17, EZ18, GZH+14, AABE20]. Hiding
[AK14]. Hierarchical
[GS15b, TYY+19, FTS+20, WLGL19].
hierarchical-deterministic [WLGL19].
High [CGFH16, DMH18g, DHES16,
MPSP17, SS12, SZ15, TOM17, Via16,
XLM+17, XZK+17, BF20, ZLX+17].
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High-Frequency [Via16].
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High-Rate [SZ15]. High-Throughput
[MPSP17, SS12, XLM+17]. Higher
[MZLW20]. Higher-Level [MZLW20].
Highlights [Sup16]. Highly
[JKKX16, Far18a, RST11, Cim19].
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[Gal18]. Hijacking [AVZ17]. History
[AMVA17, Drec17d, Hii14, Abe18]. Hit
[Ker18b, Ano18a, Lee13]. hitchhiker
[Wal19, Wal18]. hoc [CGFH16, LMH16].
HOL [ABB18]. Hole
[bAHRAK17, bAHRAK18]. homes
[RLQ+21]. Honest [YCM20, FZC+20].
Honey [MXC+16]. hood [Zoh15]. Hop
[Voi11]. Hop-Proof [Voi11]. Hope
[Buc18, Per17]. hopes [Pal18]. hoping
[Hol18]. hopping [CK16]. Host [Ro13].
Hosts [SD16a]. hot [Per20]. Hotwire
[CPMM21]. Hours [Cim18b]. House
[PTPR17, PTPR18]. Hub [BKMW+17]. huge
[Hol18]. Human [PHD+17, Har17].
Hundred [Uni14]. hybrid
[Ano21d, HZLH19, LTC+19]. Hype
[PZZ+20, Per17]. Hypergraph [RIJ+17].
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Lin21, MBT19, Suk19, Yew18, BHH19].
Hyperpubsub [ZZJ17].
I.R.S. [HM18]. I/O [Dry14]. IBM
[MDN+18]. IC [AHC+21, IK19]. Iceland
[Ano18i, Far18a, Hol18]. Icelandic [Far18a].
ICN [CHL19]. ICO [Ito18, Osb18a]. Idea
[BP15, Nis16b, WK19]. Identification
[BBCC20, MYZ19, PPR+20, TT19,
TOM17, Cha85]. Identifying [Dre17k].
Identities [ACC+17, Smo18, Sei20, SJX+20]. Identity
[AK17, AB17, AABM17, DP18, FR16, Hal17,
Kue18, LN17, LLW17, LLP+20b, LHO+20,
NML19, Sar21, YL20a].
identity-authentication [NML19].
Identity-Based [LLW17]. Ideological
[KPW19]. IDPS [Ali19]. IEEE
[TODM19, ALP15]. if
[Fai17, Far18b, LP18c, LP18d, Pec17a]. II
[HSB18c, OF15]. III [HSB18d]. IoT
[GLW+20, KXSS21, SRB20, WLC+20].
IoT-enabled [GLW+20]. Illegal
[CPMM21, MCF20]. Illinois [Nor17a]. Im
[CXG+18, ABR17]. Image
[CCC19, KTM+21]. Images
[Via16, XJR+17]. Imaginaries [KL17].
imagination [Fin17b]. Imaging [Shu17].
Immediately [Ro13]. Immigrants [Chi18].
Immune [LZC+17, Xu16]. Immutability
[EN17, DLK+21]. Impact
[ATD17, Be18, Blo18, LJG15, SLS20,
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[AKGN18, CC16, Wel18, YNS16, vs02].
implicated [Duc13]. implication [SBL19].
Implications [GSF+20, MZ19, TSL+17,
dCdCM14, MGM+17]. imported [XLL+19].
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Impossible [Poe14, Lan11a]. Improve
[FOA16, Riz16, FOA17]. improved
[SCE21, ZLJW20]. Improvement
[But19, ALMLS16, HC12]. Improvements
[KKV16]. Improving [BHS93, CWL17,
CXW+21, HM20, BR17, Sal18]. In-Browser
Incentive [DCZ+21, HLC+17a, NWGF20, SBBR17, ZGR17, WLC+20].
Individual [EN19, MZ19]. Industrial [LSFK17, MFB+20, SLS20, CLH+20, FBL+20, Ker18b, KTM+21, ZWH+20, ZNX+21]. industrialise [BDP17b].
Inferring [KCS+14, NAH16, DMR17a]. Influence [BO17, ESLB20, ZDL17a, ZDL17b]. Info [Gal18, Bar18]. Info-highway [Gal18].
Information [AR15, BART17, BKM+17, Cra17, DW13, GK14, HV20, Hut17, JBL17b, JL17, Joh18, NH17, OA17, WDS21, Yan21, Zam19, LHL20, LQZ+20, SSL+19].
information-centric [LQZ+20]. Information-Processing [HV20]. informational [CSG+18]. Structural [JB18a, JB18b]. Infrastructure [EN17, JB17b, MBC+17b, OA17, OJ17, OY17, DGP20, Ser21]. Infrastructures [CGT+1, CPMM21]. Infrastructure [KL17]. Initial [IPL+18, ISM17].
Initiatives [HRE17, OO19, OA17, CPSGAA20]. Innovating [Bhe17e]. Innovation [Doz18, Mor17f, Sch14a, Sch19b, And18, Lec15, LMR17]. Innovationen [FRSU17].
Instruments [Lee15]. Insurance [CIL+21, GLD+18, VMMA17]. Integer [DDX17]. Integrated [LTW+21, PK19, MRR+20]. Integrating [OY17, Shu19, TBB21]. Integration [DT18, GSF+20, HRC19, XZY+21, Bit09, SBA21].
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Intelligence [Du21, SG19, SRP20, SMZ14, YWJ+16, YSZ+19, DNZ+19]. Intelligent [SRP20, VFS+19, CJA+19, LYW+21, SK18].
Intensive [DTT17]. Intent [EN19, KLL+15]. Intentions [GZB+14]. Inter [SYK17, LZZ+20]. inter-domain [LZZ+20]. Inter-Service [SYK17].
Interaction [Fot17]. Interactions [Kra16b, OR17]. Interactive [Hir17, YSZ+19, ZGGT16]. Interchange [Nar19]. Interconnectivity [HQP15].
Interest [BHM20, AAC+19a]. Intermediation [KET+17]. International [ACM17e, ACM17d, CRM+16, GANAHHJ17, GP17b, JRB+17, Ker12, OF15, Sad13, TOD19, BCJR15, IKY05, Jue04].
Internet [MFR+21, AA20, AAC+19b, Alv18, Ban19, Big20, Böhm13, CXC+20, CLH+20, CVM17, DGP17, GLF20, GLW+20, HL16, HLY19, JCG+21, JBK+19, Ksh17a, Ksh17b, LL16, LL17a, LQY19, LWZ+21, Mc13, Mic14, PK19, PP16, QFLM17].
RKT19, RWG21, RDDH19, Ses18, SM20, SNKG20, Son18, SCZ+21, SGD19, Sve17, TSY+21, TBB21, XAY17, XAY18, XLL+21, ZW17, ZWH+20, ZLT+19, vO20].

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Internship [HMS17]. Interoperability [CWL17, JB18b, JF21, LLP20a].

Interoperable [Lim18]. interoperating [WHA+20]. Interplay [KCS+14].

INTERPOL [Tzi18]. Intersection [JB18b]. Intricate [Bhe17c]. introduced [Ano17a]. Introducing [Dan17b, JB18a]. Introduction [CGT+21, Dzi15, HSBI17d, HSBI8h, JSK+17, Kat16, MY11, NBF+16, ZFY16, ZFY17].

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Inverse [EDS15]. Investigating [JKS16, KAK20, RC16]. Investigation [Alv18, Smr18, VCIK17, WRB15, ZGt15, CF15, Kt17b, RSJP19].

Investment [Ano18m, Pop17a, Supf16, TOM17, DXW21, KH17, XLZ20]. investor [BT18b]. investors [Lew15]. Invitation [BK17c].

Invitation-Based [BK17c]. Invited [Gar17, Zoh17]. Involving [Nav17]. IoT [ACM17d, Ban19, MBF+20, ADA17, AVA21, AAD+21, BTF+21, BBGP19, BLNN17a, DkJ17, DkJG19, Du21, FSY+19, FBL+20, FFL21, HHSB18, HRC19, Ks18, LLLh+20, LDWS17, LTMW19, LHL20, LSH17, Liu18, LGGB+21, MKY+21, MAAN19, MBK+21, MTR+21, MLTT20, MFE+20, MGE20, MMR+21, MBC+17b, MRR+20, OEO16, OEO17, ÒY17, RKP19, RSJP19, SGM20, SD16a, SBA21, SRB20, Ser21, SHBD17, SSL+19, SRP20, WH+21, WDLS17, WSC+20, WHY+21, YL20b, ZW15, ZW17, ZWS+20].

IoT-assisted [MLTT20].

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Iota [SM20]. IoTPTS’17 [ACM17d]. IoTs [MKs+19]. IP [AGGM16, Gia15]. IPFS [ADA17, KTM+21]. Irrational [KVP21].

Irrefutable [FTD17]. Irregularities [RDD17]. IRS [Far18b, Int14]. Isabelle [ABBS18, Kam17]. Isabelle/HOL [ABBS18]. isn’t [BP15, Itou18, SK14].

Isolation [Ses18]. Issue [Ano18j, AHWB20, CBT+21, Mat14, MFR+21, WSN18, FD20a, YSD+20, ZFY16, ZFY17]. Issues [BGM20, Bon16a, Du21, bAHRAK17, bAHRAK18, SRB20, VCIK15, BB15, CXC+20, CCH21, DSM+17, HRC19, Lyn14, MKS+19, SJY121]. Italian [AF16, Cap15]. Iterative [NT21]. it’ll [PW17a]. Ivy [Gei16].

January [BCJR15]. Japan [Sad13, Nis16b, Uhr121, YWW+18, YWS+18].


Journey [BBP19]. Juan [BCJR15].


Key [Alz19, Bon16b, Et19, Gs15b, Jue04, Kee16, MSCH15, CSC16, DSPSHJNA18, EBSC15, MBB+15, Mer80, Per09, XLL+21]. Keyless [EN17]. Keynote [HM16, Spo17, Web21].

keys [Sei20]. keyword [JGL+20].

Kimberley [Wey19]. Kindleberger [G17]. kleptographically [WLGL19].

kleptographically-secure [WLGL19].

Know [JBK+19, KD16]. Knowledge [CGGN17, Dan17a, GCL16, MGDEK17, MGDEK18, YSO20, YL20a]. Kodak [Ano18j, Bwe18, Rue18]. KodakCoin [Bwe18]. können [KFR18, KFR17]. Korea [Ano18k]. Kralendijk [Ker12].

Kryptoökonomie [Six17e].

Kryptowahrungen [Ale18b]. Kubernetes [Yew18]. Kudos [SD16b]. kurz [Pla13].

Labeling [NPS+17]. landscape [LSS14].

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Metrology [MBC17a].
Micro [VMMA17, YNS16].
Micro-insurance [VMMA17].
Micro-Pricing [YNS16].
microgrid [ML20].
Micro-insurance [VMMA17, YNS16].
Micro-Pricing [YNS16].
Microgrid [BLSD17].
MicroMint [RS96a, RS96b, vS02].
Micropayment [BDW17, DW15, RM19, RS96b, RS96a].
Micropayments [Pas15, KK20a, Riv04].
Microsoft [Cim18b, Tun18].
Microstructure [Wu19].
Middleman [MC13].
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Million [Cim18a, Gre13, Mck18, Osb18b].
Millionaires [Ras13, Pop15, Pop16a].
Millions [Ano19a, BBM18, Seg18].
MILP [Coe20b].
Mind [Ano14a, MBC17b].
Minds [GCL16].
Miner [Eya15, Ler14b, SGF17, WL15, CSLD17, Tun18, YCMM20].
Miners [BBM18, GCD16, Kan18, FZC17, CSLD17, Tun18, YCMM20].
Mine [CP17a].
MiniChain [CW20].
minimal [MAQ99].
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Minority [DFT16].
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mistrusting [dORM19].
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Mitigation [BRS17, Gou19, RBL+17, RBS17, AHC+21].
MixM [QHW+20].
mix [BSK+20].
Mixcoin [BNM+14].
Mixed [Mic14].
Mixers [Coul13].
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Mixing [BOLL14, RMSK14, RMS17, SFMC21, ZGH+15, ZMH+17, ZMH+18].
MNC [IM16].
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[Abr18, Gev16, MCS+21, SVL17, FY19, FMR+19, Lin16, HS19b, PF18].
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MOBT [WLGL19].
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[BBGP19, CTM19, CQ20b, ES1620, FOA16, FYK17, HG15, Hup17, HP19, LS17, LT17, MZWX21, ML14, CEOE16, CEOE17, Tam19, YLZ20a, AC19, HZL17, KKM19, LTW+21, MRR17, NA15, NE+21, WCX16, YJK21, ZW15, ZDL17a, ZDL17b].
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[ADB14b, BYS19, JL17, LLH+20, CFvdPS15, Suk19, VSE21, LGT20].
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[LS20, VM18, Kat17, LW16, Liu18, PCP20, PR16, BBM17].
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[Hut17, Rec19].
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monetizing [HDM+14].
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[BWZ17, Bel18, Ber13, Bhe17c, Dre17s, Gia15, Har17, Nak18, Nis16b, Pan96, Roi13, WvB14, CSG18, Fri14, G.17, GC08, Måel13, MBB13b, MBB13a, Nis16a, OC16, Pal18, Pop15, Pop16b, Rot17, Sch14b, SZ13, TT16, TTC16, VC15a, VC15b, PP16].
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[Nar19, Shu17, WX16, MFE16].
monnaie [San14b, TFG17].
Month [De18].
Moonwalk [KZVT17].
Moratorium [De18].
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Move
[WREK18, Nor17c].
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much [Kug18].
MudraChain [KBT20].
Mulls [De18].
Multi [ABL18b, KK20a, LFZ+21, RBS17,
WLL+13, ZGH+15, Ano21a, CLT+20, FZC+20, HVM+18, HZL+20, LB18, MPSW19, PK21, Sko19, YJK21.

**multi-agent** [Sko19]. **Multi-Blockchain** [KK20a]. **multi-blocks** [FZC+20].

multi-cryptocurrency [HVM+18]. **Multi-domain** [RBS17, PK21].

**multi-fractality** [LB18]. **multi-input** [Ano21a]. **Multi-Layer** [LFZ+21].

**multi-output** [Ano21a]. **Multi-Party** [ZGH+15, ABL18b, CLT+20].

Multi-processor [WLL+13]. **multi-resource** [YKJK21].

[**multi-signatures** [MPSW19]. **multi-tenant** [HZL+20]. **Multifaceted** [MMT16b].

**networking** [DKJ19, FZC+20, FD20b, HLC+17b, KDS+20, LP18c, LZZ+20, MLYL20, NPDS20, SCP+20, SYCC21, TKW15, VD17, WHY+21, ARK20]. **Networks** [BDW17, EKK+17, FDT17, JL17, JNWS19, KAT16, KGM16, LWM+21, MMSK+17, MMSH16, MM+21, PSS17, RGB20, RLT17, SKA+20, SYK17, SZJ17, TWFO20, WK19, A+13, BAJ20, BLMQ19, Che18, DKJ19, FZC+20, FD20b, HLC+17b, KDS+20, LP18c, LP18d, LZZ+20, MLYL20, NPDS20, SCP+20, SYCC21, TKW15, VD17, WHY+21, ARK20]. **Netzwerks** [Six17h]. **Neural** [JL17, Ser21, VCPC20, WK19, Che18, GSS20b, LTBY20].

**Neutrality** [Kuz19b, Kuz19a]. **Never** [McM13]. **newly** [Pal18]. **News** [Ano16a, Kug18, Pec15, Pec16, Und16]. **Next** [AMLH15, But13b, CGT+21, MRS18, OA17, AMLH18, Ant20, LP17b, LP17c, LP18b]. **Next-Generation** [AMLH15, But13b, MRG18, AMLH18].

**NEXTLEAP** [Hal17]. **NFC** [Mic16]. **NG** [NWGF20]. **NIC** [SNM17]. **NiceHash** [Nie17]. **Nick** [McG18]. **No** [MPJ+13, Pop17a, VM15, MPJ+16]. **Node** [Ano18b, YLZ20a, XHST20]. **Nodes** [FBHS19, Ye015]. **Non** [BMSS19, EAVM20, FDT17, GCL16, TD17b, Sar21]. **Non-blocking** [EAVM20]. **Non-equivocation** [TD17b]. **Non-Permissioned** [BMSS19]. **Non-Repudiation** [FDT17].

**Non-transferable** [Sar21]. **Non-**[Users] [GCL16]. **Noncausal** [HG15]. **nondeterministic** [WZS19].
nonmathematicians [Gom16].
Nonoutsourceable [MKKS14, MKKS15].
Nonparametric [DH17].
Normative [RC16].
North [Ano18k].
Norway [GANAHHJ17].
Notarization [MGDEK17, MGDEK18].
Note [BS16, Nis16b, WR16, Wil17, WR18, Hea13].
Nothing [Pop18a].
Notice [ALP15].
Novel [LSZ+21, MCS+21, OEO16, OEO17, YWJ+16, BAR21, LZZ+20, SGM20].
NRE [KZVT17].
Nudge [WMD+20], nuevas [HA15].
Number [Duc13, Kin13].
Nutzen [KFR17, KFR18].
Nxt [Pop16a].
NY [IKY05].
O [Dry14].
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Objectives [TBB21].
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oblivion [RS21].
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obsolet [Cha85].
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Off-Blockchain [HBG16, KG17, Ano21d].
Off-Chain [Kra16b].
Off-Chaining [ET17].
Off-line [GH05].
öffentlich [PB17].
Offerings [IPL+18].
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Online [DNSY14, DNY17, WLGL19].
Offloading [DCZ+21].
offs [KLDS20, SIDV14].
ohne [MöI13].
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on- [Ano21d].
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one [Sha17].
Oncoology [DXR+17].
One [GCL16, Pav18, Uni14, Nor17a, Tun18].
Onion [GDP+17, Esc18].
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Only [McK19, LP18c, LP18d].
Onto [SD16a].
Ontology [RC16, dKW17].
op [PdWWS16].
OP_RETURN [BP17a].
Open [ACM17c, BGM20, BLBS17, Du21, HRE17, Lim18, LNZ+16, TNM17, XWL+19, dCdCM14, Cap12, CXC+20, Hol15, KS18, LFX+20, MKS+19, Sko19, SJSY21, VDVC21, WMD+20, Cap12].
Open-Source [dCdCM14, Cap12].
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operate [SAL20].
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opportunités [San14b].
Opportunities [BGM20, EBD+20, FFL21, HSB17a, HSB18e, JB17a, MWV+18, SK17, Van14b, ACA+19, AF16, DBC+21, HYL21, Ker14, LZD21, MCLH19, San14b, San14a, ZFY16, ZFY17].
Opportunity [Mul14f, Tzi18].
Optimal [GGN16, SSZ17, HZLH19].
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optimizations [CSC16].
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organization-friendly [ZWX+20b].
Organizations [DMH18f, KPP+20, Son18].
Organized [MDAP16, MAP16, Pic20, Far18a].
Oriented [GvRS17, OR17, IPSP17, NML19, PPM+17].
origin [CCMN17].
Origins [SJZG19].
Oslo [GANAHHJ17].
Other [EDS15, Eva14, KJGW17, Pop17a, Ano18a].
Ours [Smo18].
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outbreak [Tun18].
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Outliers [MNT16b].
Outlive [Hur16].
Outlook [LWL+21, GL16, ZZ16].
output [Ano21a].
outsourced [FBL+20]. outsourcing [BJ20, HCW+18]. Overcoming [BLNN17a, GG17, HRF17]. Overlays [CM16, MO15]. Overstock [Sid14]. Overview [Ros12, YMRS18, ZFY16, VG17, ZFY17].

Owner [GANT21, Gre13]. Over-Custodianship [GANT21]. Ownership [Dre17h, Dre17w, CAMS20, HP17].

P2P [ACM15, Ali15, BKP14, Cas12, DPSHJ14, FSW14, HLC+17a, KKM14, Nak08b].


Paper [AM15, BDLF+16, GvRS17, MCJ17, Sch14b, XJY17, Ano17a, Nak08b, Sad13].

Papers [BBMS14, CSN14, JRB+17, Ker12, BCJR15, CMR+16, GP17b, Jue04].

Paradigm [Mor17c, HZL+20]. Parallel [HM20, LSH13, CSLD17]. Parking [KK20a].


partially [WZQ+17]. Participants [ACV17]. participation [LP18c, LP18d].


Password [IK17, JKKX16, LSZ+21, McK19, HZ20]. password-based [HZ20].

Password-Protected [JKKX16]. patch [KW20]. Path [LCL17, Mei18, YS20]. paths [YS20]. Patient [WDS21]. Pattern [LLP+20b, RJK+17, TOM17, HLC+17b]. Patterns [EZ17, EZ18, MYSZ19, NML19].

PAXOS [DLL00, DLL97, GL00, HMS17, Lam01, MBD+12, MPSP17, PLSS17, RST11, Ros03, SS12, SS13, Sun15, VA15, VB08].

PaxosStore [ZLX+17]. Pay [Ede14, HSB17d, HSB18h, ZGR17, BDE+13]. payer [ZLL+19a]. Paying [Dre17l].

Payload [Kan18]. Payment [AH12, CGFH16, DW15, EKK+17, GM17, KG17, Lei16, LZC+17, MMSK+17, MMSH16, MSH17, RLT17, Sch98, Sou13, TWFO20, CJW17, ECA+20, ECA+21, Kha15, WZS19, YTLD19, ZWX+19a, ZWX+19b].

Payment-Channel [MMSK+17]. Payments [AM15, BSCG+14, Bon16a, CCGN17, Cha83, DNSY14, DNY17, Gv16, Gom16, KAC12, MPJ+13, SCG+14, Bar18, Gini16, HCW+18, MPJ+16].

PayWord [AH12, RS96a, RS96b]. PBFT [CCA+20, LFZ+21]. PBFT-Inspired [CCA+20]. PCS [KLR+17b]. Pedigree [NC17b]. Peer [AAA20, Ano17a, CVM17, CS15, GH05, KN12, NAH16, Rin18, SOA17, SZJ17, FOA17, Nak08a, NAH15, TF16, VCS03].

Peer-to-Peer [AAA20, Ano17a, KN12, NAH16, SOA17, CS15, GH05, SZJ17, FOA17, Nak08a, NAH15, TF16, VCS03].

Peers [Dre17g]. Pegged [IK19]. Penalizing [RKS15]. Penalties [KB16, KV16].


Performance [ABF+16, Cor19, DMH18g, Gao17, GK+16, Mal18, MMR+21, RJZ20, SCAA13, Suk19, XZK+17, BANT20, DCB+21, Dev14, DHES16, KAK20, Li14a, Li14b, Sal18].


Permacoin [MJS+14]. Permeability [JB18b]. permission [AAC+19b].

Permissioned [BANT20, BMSS19, EN17, HS16c, HP19, Moh19, Suk19, Vuk17, ZZJ17, ASB+21, AAE19, BMHB21, DCM+21, HSGY20, SJX+20, TYY+19].

permissionless [BHMB21, LLZY20].
Personal [EN19, Gir18, LN17]. personnel [CLS19a]. perspectivas [HA15].
Perspective [FSW14, Kan20, Kün16, LD17, Mor17f, Mor17g, Sir16b, Sve17, Tzi18, CZ16, CDR18, FD20b, Her19, KFR17, Liv20].
Perspectives [BMC15, PZZ19, Dus14, HA15].
Phishing [CPL19, Ano18k, Pal18].
Poster [CGFH16, DNY14, HII14, JCG17, XWW17, MHH120]. Potential [BBB15, Dre17o, HII15, HSB13c, HSB18g, Ksh20, CXLC18]. Pound [Hii14]. Power [Bon14a, DVR16, LSP120, WMG120, YKDEV19, Cae15, Gou17, Hol18, ML20, Ole18, ÖY17, PW17a]. Powered [QFLM17]. powerful [Hol18, RS21]. Powering [AML15], PPCoin [KN12], PQChain [EGB18]. Practical [CDD17, KFN120, Ksh20, RMS14, THF17, VSE21, XZY120, vs02, ZLX120]. Practice [Ami21, BMN12, ELFCL20, NM16]. Practises [IPL120, Mor17d, BGPW16]. Pre [KLL120], Pre-Search [KLL120]. Precise [LGT120]. Predictable [MLM16]. Predicting [GGKR21, KLL120].
Prediction [JL17, NTKS17, BAR21, CLS19b, CLS20, QHNL21]. Predictions [MDAP16, MAP16]. predictor [MLM15]. Preemption [RRCL17]. Preface [Ano19c, LPW17b]. Preferences [NTK17]. Prescribed [ZP17a]. Presence [GCR16, KDF13, Pou20]. Preservation [MJS12, HRC19]. Preserving [ARBK17, ACV17, DCK17, DDX17, KLR120, KLM120, KMMW17, KUE17, KUEE18, LS17, LL17b, LL17c, OEO16, OEO17, SVL17, WQH17, WQH20, ZHC120, BYR120, BSK120, BBB120, GLY120, HZS120, JML120, KUE17, LWZ120, MZA120, PHH120, QHNL120, SJS120, YYZ120, ZLT120]. Prestige [KSAB21]. Pretty [WA15, Ito18, Sha17]. prevent [Lew15]. Preventing [aNOE17]. Prevention [CBWF17, Peo13, SPB17, Kha15, PSDSNAH19]. Price [Bla18, EDS15, GHMO17, Kha19, Urq17, Wu19].
Prices [JL17, Smu18, LLJ21, MYSZ19].


Primitives [GCR16, GCR18, WSL].

Primitives [Kin13].

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Proceedings [ACM17c, CRS83, OF15, ACM17a, ACM17b, ACM17d, GANAHH17, IKY05].

Process [CWL17, Doz18, MWV^+18, VCL17, WXR^+16, FMR^+19, KR17, KK17b, LPGBD^+19, SSSJ19, Wey19].

Processes [GPP18, GCKG14, GANT21, GLY].

Products [Ano12c, GS20a, SV16].

Product [KFR17, KFR18]. Produkt-Sicht [KFR17, KFR18].

Professionals [Hut17].

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progress [OY17].

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Proof [Abr16, Axt16, Bac03, BL17, BBH^+13, BLMR14, BK17b, Coe08, DFKP13, FZC^+20, GKW^+16, HM20, Kam17, KN12, KSAB^+21, Lar13, LAB17, LTC^+19, MHWK16, Poe14, Pou20, SW21, SLY15, SDK^+17, Tro15a, Voi11, Vuk16, WSC^+20, AC19, Dry14, HYLY19, KRDO17, Kin13, Shi16, Tro14a, Tro14b, Tro15b, WHJ17, WJJ20, YL20a, ZLT^+19, Cor19, LC04].

Proof-of-Activity [LTC^+19]. Proof-of-Belief [Abr16].

proof-of-delivery [ZLT^+19].

Proof-of-Elapsed-Time [Cor19].

Proof-of-negotiation [FZC^+20].

Proof-of-Prestige [KSAB^+21].

Proof-of-Stake [BL17, KN12, LAB17, KRDO17].

Proof-of-Work [Bac03, BBH^+13, BK17b].
Proofs [DBB\textsuperscript{+}15, SBR16, SAL20].

Propagation [FOA16, OAB\textsuperscript{+}17, SOA17, DW13, FOA17].

Properties [Gar17, YK15, DMR18].

Property [Int14, Zei16]. proportion [YV17]. Proposal [GP17a, SI16, HC12].

Proposals [Bra13, EBH16, ALM16].

Prospect [SCYP17]. Prospects [Hi14, GGK20, HRC19]. prosumer [DLK\textsuperscript{+}21]. prosumer-side [DLK\textsuperscript{+}21].

Protect [ABL\textsuperscript{+}18a, JKKX16, RS14].

Protected [JKKK16]. Protecting [Dre17k, Dre17a, WLL\textsuperscript{+}13]. protection [BP17b, FHZ\textsuperscript{+}19, HHWD17, WWZ\textsuperscript{+}20].

Protocol [BLP17, Böh13, Coe08, GKL17, HLC17c, KKS14, LN17, Ler14b, LL17, LNZ\textsuperscript{+}16, ML15, MSH17, MHWK16, Mue18, NT21, OAB\textsuperscript{+}17, PSS17, SYB14, SALLY17, WCL17, ZP17a, ASB\textsuperscript{+}21, AB20, BB15, BF20, CW20, DLP\textsuperscript{+}20, GKL15, Hea13, HLC19, KRDO17, KBS\textsuperscript{+}21, Ler14a, LLZY20, CFvdPS15, ML17, NML19, PHH\textsuperscript{+}20, TYY\textsuperscript{+}19, VG17, WSC\textsuperscript{+}20, XHST20, XLL\textsuperscript{+}21, YYN\textsuperscript{+}20, ZW15, ZWS\textsuperscript{+}20].

Protocols [BK14, LABK17, Luu17, Mer80, MXC\textsuperscript{+}16, KKS\textsuperscript{+}17a, PLS17, P'16, ZWH18].

prototype [Ano21e]. Provably [Pia16, KRDO17]. Provably [LST\textsuperscript{+}17]. ProvChain [LST\textsuperscript{+}17]. Provenance [AS18, LST\textsuperscript{+}17, NSNF17, PK19, RCD\textsuperscript{+}19].

Provers [Hir17]. proves [LC04]. provider [Gir18]. Providing [LDWS17].

Providing [Eti19]. Provisions [DBB\textsuperscript{+}15, GCKG14]. Proximity [SOA17].

Proxy [MK\textsuperscript{+}21]. Proccess [KFR17, KFR18]. Prozess [KFR17, KFR18].

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