A Complete Bibliography of Publications in *Computing and Software for Big Science*

Nelson H. F. Beebe
University of Utah
Department of Mathematics, 110 LCB
155 S 1400 E RM 233
Salt Lake City, UT 84112-0090
USA

Tel: +1 801 581 5254

E-mail: beebe@math.utah.edu, beebe@acm.org,
beebe@computer.org (Internet)
WWW URL: https://www.math.utah.edu/~beebe/

08 October 2025
Version 1.17

Title word cross-reference

b [39]. *N* [107].

-tuple [107].

2020s [29, 20]. **2021** [78].

3 [69, 110].

4D [119].

Accelerated [26]. **Accelerating** [98, 72]. **Acceleration** [118]. **Access** [93, 92, 125]. **Accurate** [12]. **Across** [51]. **ACTS** [63]. **adaptive** [124]. **additional** [71]. **Advances** [78]. **Advancing** [40]. **Adversarial** [8, 17, 12, 83, 4]. **agent** [128]. **Agents** [5, 23]. **AI** [96]. **AI4EIC** [106]. **Algorithm** [30, 2, 130, 133]. **Algorithms** [77, 101, 117, 83]. **Allen** [36]. **Amazon** [1]. **Analyses** [90, 50]. **Analysis** [120, 55, 134, 81, 105, 87, 56]. **Analysis-Specific** [55]. **Analyzing** [84]. **Annealers** [30]. **Annealing** [117]. **Anomaly** [112]. **Apache** [11]. **Application** [93]. **Applications** [48, 109, 114, 45]. **Applied** [129]. **Applying** [35]. **Approach** [58, 103]. **Approaches** [96]. **Archive** [5, 23]. **Arnold** [129]. **Artificial** [59, 106, 16]. **Astroparticle** [15]. **ATLAS** [27, 59, 75, 71, 122, 89, 108, 110, 21]. **AtlFast3** [75]. **Autoencoder** [112]. **Autoencoder-Based** [112]. **automated** [127]. **Automatic** [132]. **Aware** [90, 4]. **Axion** [86].

B [67]. **B2BII** [13]. **Back** [114]. **Background** [61]. **bandwidth** [127]. **Based** [60, 35, 32, 123, 112, 44]. **batch** [56]. **Belle** [41, 13, 2, 14, 126, 100]. **Bench** [114]. **Benchmarking** [68]. **Big** [28, 37]. **Binned** [44]. **Building** [109]. **Busy** [27, 21].

Cache [90, 94]. **Cache-Aware** [90]. **Caching** [73]. **Cait** [87]. **Calibration** [95]. **Calorimeter** [17, 112, 100, 121]. **Calorimeters** [59, 111, 53]. **Carlo** [71, 38, 52]. **Cascades** [15]. **Case** [114]. **Centers** [47]. **CephFS** [49, 65]. **CERN** [47, 16]. **Challenge** [88]. **Challenges** [82, 28, 52]. **Characteristics** [9]. **Charged** [101, 66]. **Charm** [102]. **Charm-Tau** [102]. **Cherenkov** [38]. **Classification** [35, 129, 2, 25, 42]. **Classifying** [66]. **Cloud** [33, 6, 73, 122]. **Cloudscheduler** [33]. **Cluster** [22, 90, 49]. **Clusters** [91]. **CMS** [23, 35, 45, 6, 1, 5, 16, 112]. **Code** [72]. **Collider** [106, 61, 82, 16]. **Colliders** [117]. **Collision** [35]. **Collisions** [99]. **Columnar** [90]. **Combination** [120]. **Combine** [120]. **Command** [128]. **Commodity** [65]. **Common** [76]. **Comparison** [69]. **CompF4** [92]. **Component** [107]. **Compression** [10]. **Computational** [92, 82]. **Computing** [33, 78, 22, 118, 79, 26, 29, 97, 6, 20, 68, 18, 115, 40]. **Concepts** [74]. **Concurrent** [43]. **Connect** [125, 128]. **Connectivity** [64]. **Consortium** [74]. **Constraints** [81]. **Containerized** [49]. **Continuum** [67]. **Convergent** [96]. **Conversion** [13]. **Coprocessors** [118]. **Core** [14]. **Correct** [116]. **Correction** [23, 27]. **CORSIKA** [38, 15]. **Cost** [122, 65]. **CPU** [27, 69, 21]. **Cryogenic** [111, 87]. **CSBS** [3]. **CTA** [38]. **CUDA** [72]. **CVMFS** [49]. **Cylindrical** [58].

DAQ [124]. **Dask** [90]. **Data** [93, 35, 10, 24, 41, 77, 47, 80, 98, 90, 74, 13, 28, 51, 107, 37, 85, 11, 70, 94, 123, 119, 112, 73]. **Decays** [67, 99]. **Deep** [35, 111, 77, 55, 95, 86, 25, 99, 70, 39, 108]. **Degree** [121]. **Denoising** [70]. **Density** [65]. **Dependence** [34]. **Dependencies** [9]. **Deployment** [22]. **DESY** [56]. **Detection** [112]. **Detector** [35, 102, 61, 8, 16]. **Detectors** [58, 12, 87]. **Determination** [58]. **Developers** [46]. **Dielectric** [86]. **Direct** [35]. **Disk** [65]. **Distance** [8]. **Distributed** [5, 23, 105]. **Distribution** [47]. **division** [127]. **Downstream** [130]. **Dynamic** [47, 22]. **Dynamo** [51].

Edge [66]. **Edge-Classifying** [66]. **Editorial** [3]. **Education** [46]. **Efficiency** [54]. **Efficient** [103]. **Electromagnetic** [17, 112]. **Electron** [106]. **Emulating** [71]. **Enabling** [125]. **End** [35, 126]. **End-to-End** [35, 126]. **Energy** [59, 78, 116, 97, 95, 81, 37, 117, 114, 39, 50, 42]. **Environments** [22]. **Errors** [84]. **Estimation** [39]. **Evaluating** [65]. **Evaluation** [122, 73]. **Event** [35, 19, 25, 99, 123, 42]. **EventIndex** [89]. **Events** [35, 71]. **Example** [129, 4]. **Experiment** [122, 69, 101, 2, 5, 23, 107, 16]. **Experimental** [18]. **Experiments** [10, 104]. **Explainability** [96]. **Exploit** [27, 21]. **Exploiting** [64]. **Extra** [27, 21].

Facilities [134, 1, 115]. **Factory** [102]. **FAIR** [119]. **Fast** [75, 102, 55, 90, 12, 108, 121]. **FastBDT** [2]. **fault** [124]. **fault-adaptive** [124]. **Fidelity** [53]. **File** [84]. **Filter** [60]. **First** [130]. **fit** [131]. **FITS** [11]. **Fitting** [60, 104]. **Flexible** [103]. **Flow** [116]. **folding** [131]. **FORS** [124]. **forward** [131]. **forward-folding** [131]. **FPGA** [26]. **FPGA-Accelerated** [26]. **FPGAs** [59, 109]. **Framework** [15, 123, 131]. **Free** [119]. **Free-Streaming** [119]. **Frontier** [92]. **Full** [61, 19, 99]. **Fully** [49]. **Function** [34]. **Fundamental** [77, 74, 40]. **FunTuple** [107].

Future [79, 81].

GANs [113]. **GeantV** [43]. **Generalized** [58]. **Generating** [8]. **Generation** [75, 38, 15]. **Generative** [17, 12, 108, 121, 4]. **Generators** [31]. **Geneva** [91]. **Getting** [53]. **Gluon** [7]. **GNN** [99]. **Google** [122]. **GPU** [69, 60]. **GPU-Based** [60]. **GPUs** [36, 98]. **Granularity** [53]. **Graph** [109, 114, 126, 115, 100]. **Graphcore** [48]. **Grid** [27, 21]. **Group** [92].

Hadron [104, 99, 16]. **Haloscopes** [86]. **Handling** [51]. **Heavy** [99]. **Heavy-Hadron** [99]. **HEP** [43, 29, 129, 20, 1, 57, 96, 62, 94]. **HEPCloud** [1]. **HEPiX** [68]. **Hierarchical** [99]. **High** [36, 33, 78, 47, 53, 22, 116, 97, 6, 18, 31, 130, 81, 37, 117, 65, 114, 115, 50, 42, 52]. **High-Density** [65]. **High-Energy** [116, 117, 114, 42]. **High-Level** [36]. **High-Luminosity** [52]. **High-Performance** [18]. **High-Quality** [31]. **High-Rate** [47]. **High-Throughput** [33, 6, 18, 115]. **HL** [134]. **HL-LHC** [134]. **HLT1** [130]. **Home** [27, 21, 6]. **HPC** [47, 49, 94, 91]. **HPC/HTC** [49]. **HTC** [49]. **HTCondor** [49, 64].

IceCube [72]. **Identifying** [9]. **II** [41, 13, 2, 14, 126, 100]. **Image** [35]. **Image-Based** [35]. **impact** [71]. **Implementation** [63]. **Implementations** [69]. **Improve** [129, 25]. **Improving** [116, 83]. **Inbound** [64]. **inelastic** [71]. **Inference** [32, 98, 26, 115, 44]. **infrastructure** [45]. **Initiative** [74]. **Input** [9, 34]. **Inspired** [117]. **Integrating** [6, 128]. **Integration** [94]. **Intelligence** [106]. **Intensive** [73]. **Interaction** [66]. **interactions** [71]. **Interactive** [56]. **Interpretation** [19, 99]. **Investigation** [1]. **Invited** [78]. **Ion** [106]. **IPUs** [48].

Jet [95, 39, 83]. **Jobs** [49]. **Julia** [97, 50]. **JupyterHub** [64].

Kalman [60]. **KAN** [129]. **Kinematic** [104]. **KinFit** [104]. **Kolmogorov** [129]. **Kubeflow** [95].

Language [97]. **LAr** [59]. **Large** [93, 10, 80, 16]. **Large-Scale** [93, 10, 80]. **Learning** [88, 35, 111, 77, 32, 98, 55, 84, 26, 95, 57, 37, 109, 25, 70, 42, 4]. **Learning-Based** [32]. **Level** [36, 130]. **LHC** [122, 35, 55, 134, 90, 129, 5, 23, 25, 110, 52]. **LHCb** [36, 69, 93, 127, 130, 107]. **Lightweight** [94]. **likelihood** [131]. **likelihood-fit** [131]. **Likelihoods** [44]. **Line** [128]. **Lived** [130]. **LLP** [130]. **Location** [4]. **Location-Aware** [4]. **Long** [130]. **Longitudinal** [58]. **loop** [82]. **Luminosity** [52]. **LUXE** [101].

Machine [88, 32, 98, 84, 26, 57, 37, 109, 42]. **Machines** [67]. **MadMiner** [32]. **Management** [24, 5, 23, 123]. **Margin** [113]. **Media** [51]. **Meson** [67]. **Metadata** [81]. **Missing** [103]. **MLaaS4HEP** [57]. **Modeling** [132]. **Modelling** [80]. **Models** [108]. **Modern** [37]. **Momentum** [58, 103]. **Monitoring** [16, 112, 45]. **Monte** [71, 38, 52]. **MT** [123]. **MT-SNiPER** [123]. **Multi** [82, 126]. **Multi-loop** [82]. **Multi-track** [126]. **Multivariate** [2]. **Muon** [61]. **Muonic** [96].

Network [17, 64, 39, 9, 34, 44]. **Networks** [59, 54, 7, 66, 8, 129, 86, 12, 114, 16, 126, 115, 100, 121, 4, 124]. **Neural** [59, 54, 7, 86, 114, 16, 126, 115, 39, 100, 121, 9, 34, 44]. **neutrino** [131]. **Next** [75, 15]. **Normalising** [116]. **Normalization** [113]. **notebooks** [56]. **Ntuple** [93]. **Nuclear** [78, 79]. **Nuisance** [44]. **Number** [31]. **NVIDIA** [115].

Occupancy [61]. **Offline** [41, 107]. **oidc** [128]. **oidc-agent** [128]. **One** [116]. **Online** [41, 112]. **Open** [93, 35, 74, 85]. **OpenID** [125, 128]. **Operating** [49]. **Operation** [111]. **Operations** [41]. **Opportunistic** [94]. **Optimal** [111, 44]. **Optimization** [91, 44]. **Optimized** [2, 124]. **Optimizing** [38, 115]. **oscillation** [131]. **Ownership** [122].

Package [104]. **PANDA** [119, 105]. **Paper** [134]. **Papers** [78]. **Paradigm** [1]. **Parallelized** [123]. **Parameterization** [54]. **Parameters** [44]. **Parametric** [132, 91]. **Particle** [43, 32, 22, 101, 66, 26, 15, 8, 46, 48, 12, 109, 114, 133, 87, 4]. **Particles** [130, 96]. **Pattern** [30, 96]. **Performance** [22, 18, 65, 133, 50, 110]. **Personal** [85]. **Perspective** [85]. **Phase** [88]. **Phenomenology** [82]. **Photon** [72, 108, 100]. **Photons** [38]. **PhyLiNO** [131]. **Physics** [35, 10, 77, 78, 32, 22, 116, 79, 26, 90, 15, 74, 129, 97, 104, 81, 46, 48, 37, 109, 114, 40, 50, 42, 4, 131]. **Pipeline** [95]. **Pipelines** [37]. **PODIO** [123]. **Poisson** [44]. **Polynomial** [10]. **Portability** [133]. **Portable** [118]. **Potential** [97, 48]. **Precise** [17]. **presampling** [71]. **Presence** [44]. **Principle** [86]. **Processing** [92, 47, 98, 107]. **Production** [105]. **Programming** [97]. **Project** [76]. **Proof** [86]. **Proof-of-Principle** [86]. **Propagation** [38, 72]. **ProtoDUNE** [98, 70]. **Proton** [99, 71]. **Prototype** [43]. **Provisioning** [33]. **PUNCH4NFDI** [74]. **Python** [87].

Quality [31, 112]. **Quantum** [30, 101, 67, 117, 40, 42]. **Quantum-Annealing-Inspired** [117]. **Quark** [7]. **Quark/Gluon** [7].

R&D [29, 20]. **Random** [31]. **Rate** [47]. **Raw** [70]. **Real** [59, 109, 25]. **Real-Time** [59, 109, 25]. **Recognition** [30, 96]. **Reconstruction** [59, 103, 101, 117, 63, 99, 126, 119, 110, 100]. **Recursive** [7]. **Reducing** [34]. **Refining** [8]. **Regression** [132]. **Reinforcement** [111]. **Relevant** [9]. **Remote** [47]. **Report** [92]. **Resolution** [39]. **Resource** [92]. **Resources** [122, 64, 68, 94, 56]. **Response** [9]. **Responses** [121]. **Results** [43]. **Review** [31]. **Roadmap** [29, 20]. **Robustness** [83]. **routing** [124]. **Rucio** [24]. **Run** [69, 110].

Scale [93, 10, 80, 90]. **scheduling** [124]. **Science** [28, 18, 73]. **Scientific** [24, 80, 51]. **Secure** [125]. **Selection** [130, 25]. **Sending** [114]. **Server** [115]. **Servers** [65]. **Service** [33, 118, 26, 57]. **Services** [1]. **sets** [71]. **Shared** [77, 115]. **Shell** [125]. **Shower** [108]. **Showers** [17]. **Simulation** [75, 43, 102, 61, 53, 55, 15, 17, 86, 12, 108, 73, 121, 71]. **Simulations** [38, 116, 8]. **Simultaneous** [39]. **Single** [116]. **Singularity** [49]. **Sites** [51, 21, 27]. **SNiPER** [123]. **Snowmass** [92]. **Soft** [113]. **Software** [76, 29, 46, 14, 62, 110, 52]. **Solution** [68, 5, 23]. **Source** [11]. **Space** [9, 34]. **Spark** [11]. **Specific** [55]. **Spectral** [113]. **Speed** [53, 2]. **Speed-Optimized** [2]. **sPHENIX** [63]. **Statistical** [120, 44]. **Storage** [92, 51, 73]. **Strategies** [70]. **Straw** [58]. **Streaming** [119]. **Study** [114]. **Studying** [48]. **Super** [102]. **Support** [67]. **Supporting** [18]. **Suppression** [67]. **Survey** [74]. **Switch** [116]. **SYCL** [133]. **SymbolFit** [132]. **Symbolic** [132]. **Synthesis** [4]. **System** [41, 105, 123, 112]. **Systematic** [34, 44]. **Systems** [81].

Tagging [7, 83]. **Tasks** [129]. **Tau** [102]. **Terabyte** [90]. **Terabyte-Scale** [90]. **Test** [114]. **Them** [116]. **Throughput** [88, 33, 6, 18, 115]. **Time** [59, 109, 25]. **Tokens** [128]. **Tool** [120]. **Toolkit** [87]. **Tools** [37]. **Topical** [92]. **Topology** [25]. **Total** [122]. **Track** [60, 101, 117, 63, 119, 110, 126]. **Tracking**

[76, 66, 133, 88]. **Training** [46, 62, 83]. **Transfer** [84]. **Transfers** [80]. **Transport** [43]. **Transverse** [103]. **Trends** [79]. **Trigger** [36, 69, 130, 109, 127]. **Triton** [115]. **Tube** [58]. **tuple** [107].

Uncertainties [34, 44]. **Unleashing** [64]. **Unprecedented** [61]. **upgrade** [127]. **Usage** [94]. **Using** [8, 17, 49, 64, 12, 126, 133, 100, 21, 44, 27].

vCHEP [78]. **Vector** [43, 67]. **Vertexing** [130]. **via** [66]. **Virtualized** [22]. **VM** [33]. **Volunteer** [6]. **vs** [65].

Wasserstein [8, 17]. **Web** [1]. **Where** [85]. **White** [134]. **Within** [74]. **Without** [64]. **Wizard** [93]. **WLCG** [84, 68]. **Workflow** [5, 23]. **Workflows** [118, 94].

Zero [121].

References

Holzman:2017:HNP

[1] Burt Holzman, Lothar A. T. Bauerdick, and Eric W. Vaandering. HEPCloud, a new paradigm for HEP facilities: CMS Amazon Web Services investigation. *Computing and Software for Big Science*, 1(1):??, November 2017. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-017-0001-9`.

Keck:2017:FSO

[2] Thomas Keck. FastBDT: a speed-optimized multivariate classification algorithm for the Belle II experiment. *Computing and Software for Big Science*, 1(1):??, November 2017. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-017-0002-8`.

Beckmann:2017:CE

[3] Volker Beckmann, Markus Elsing, and Günter Quast. CSBS editorial. *Computing and Software for Big Science*, 1 (1):??, November 2017. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-017-0003-7`.

deOliveira:2017:LPP

[4] Luke de Oliveira, Michela Paganini, and Benjamin Nachman. Learning particle physics by example: Location-aware generative adversarial networks for physics synthesis. *Computing and Software for Big Science*, 1(1):??, November 2017. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-017-0004-6`.

Kuznetsov:2018:ASD

[5] Valentin Kuznetsov, Nils Leif Fischer, and Yuyi Guo. The archive solution for distributed workflow management agents of the CMS experiment at LHC. *Computing and Software for Big Science*, 2(1):??, November 2018. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-018-0005-0`. See correction [23].

Field:2018:CIV

[6] L. Field, D. Spiga, and L. Cristella. CMS@home: Integrating the volunteer cloud and high-throughput computing. *Computing and Software for Big Science*, 2(1):??, November 2018. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-018-0006-z`.

Cheng:2018:RNN

[7] Taoli Cheng. Recursive neural networks in quark/gluon tagging. *Computing and Software for Big Science*, 2 (1):??, November 2018. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-018-0007-y`.

Erdmann:2018:GRP

[8] Martin Erdmann, Lukas Geiger, and David Schmidt. Generating and refining particle detector simulations using the Wasserstein distance in adversarial networks. *Computing and Software for Big Science*, 2(1):??, November 2018. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-018-0008-x`.

Wunsch:2018:IRD

[9] Stefan Wunsch, Raphael Friese, and Günter Quast. Identifying the relevant dependencies of the neural network response on characteristics of the input space. *Computing and Software for Big Science*, 2(1):??, November 2018. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-018-0012-1`.

Aubert:2018:PDC

[10] Pierre Aubert, Thomas Vuillaume, and Nahid Emad. Polynomial data compression for large-scale physics experiments. *Computing and Software for Big Science*, 2(1):??, November 2018. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-018-0010-3`.

Peloton:2018:FDS

[11] Julien Peloton, Christian Arnault, and Stéphane Plaszczynski. FITS data source for Apache Spark. *Computing and Software for Big Science*, 2 (1):??, November 2018. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-018-0014-z`.

Musella:2018:FAS

[12] Pasquale Musella and Francesco Pandolfi. Fast and accurate simulation of particle detectors using generative adversarial networks. *Computing and Software for Big Science*, 2(1):??, November 2018. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-018-0015-y`.

Gelb:2018:BDC

[13] Moritz Gelb, Thomas Keck, and Anze Zupanc. B2BII: Data conversion from

Belle to Belle II. *Computing and Software for Big Science*, 2(1):??, November 2018. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-018-0016-x.

Kuhr:2019:BIC

[14] T. Kuhr, C. Pulvermacher, and N. Braun. The Belle II core software. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-018-0017-9.

Engel:2019:TNG

[15] Ralph Engel, Dieter Heck, and Darko Veberič. Towards a next generation of CORSIKA: a framework for the simulation of particle cascades in astroparticle physics. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-018-0013-0.

Pol:2019:DMA

[16] Adrian Alan Pol, Gianluca Cerminara, and Agrima Seth. Detector monitoring with artificial neural networks at the CMS experiment at the CERN Large Hadron Collider. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-018-0020-1.

Erdmann:2019:PSE

[17] Martin Erdmann, Jonas Glombitza, and Thorben Quast. Precise simulation of electromagnetic calorimeter showers using a Wasserstein generative adversarial network. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-018-0019-7.

Huerta:2019:SHP

[18] E. A. Huerta, Roland Haas, and Daniel S. Katz. Supporting high-performance and high-throughput computing for experimental science. *Computing and Software for Big Science*, 3 (1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0022-7.

Keck:2019:FEI

[19] T. Keck, F. Abudinén, and A. Zupanc. The full event interpretation. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0021-8.

Foundation:2019:RHS

[20] The HEP Software Foundation, Johannes Albrecht, and Efe Yazgan. A roadmap for HEP software and computing R&D for the 2020s. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-

2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-018-0018-8.

Wu:2019:UAE

[21] Wenjing Wu, David Cameron, and Di Qing. Using ATLAS@Home to exploit extra CPU from busy grid sites. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0023-6. See correction [27].

Buhrer:2019:DVD

[22] Felix Bührer, Frank Fischer, and Bernd Wiebelt. Dynamic virtualized deployment of particle physics environments on a high performance computing cluster. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0024-5.

Kuznetsov:2019:CAS

[23] Valentin Kuznetsov, Nils Leif Fischer, and Yuyi Guo. Correction to: The Archive Solution for Distributed Workflow Management Agents of the CMS Experiment at LHC. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0025-4. See [5].

Barisits:2019:RSD

[24] Martin Barisits, Thomas Beermann, and Tobias Wegner. Rucio: Scientific data management. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0026-3.

Nguyen:2019:TCD

[25] T. Q. Nguyen, D. Weitekamp III, and J-R. Vlimant. Topology classification with deep learning to improve real-time event selection at the LHC. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0028-1.

Duarte:2019:FAM

[26] Javier Duarte, Philip Harris, and Zhenbin Wu. FPGA-accelerated machine learning inference as a service for particle physics computing. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0027-2.

Wu:2019:CUA

[27] Wenjing Wu, David Cameron, and Di Qing. Correction to: Using ATLAS@Home to Exploit Extra CPU from Busy Grid Sites. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic).

URL https://link.springer.com/article/10.1007/s41781-019-0029-0. See [21].

Heiss:2019:BDC

[28] Andreas Heiss. Big data challenges in big science. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0030-7.

Elsen:2019:RHS

[29] Eckhard Elsen. A roadmap for HEP software and computing R&D for the 2020s. *Computing and Software for Big Science*, 3(1):??, December 2019. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0031-6.

Bapst:2020:PRA

[30] Frédéric Bapst, Wahid Bhimji, and Alex Smith. A pattern recognition algorithm for quantum annealers. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0032-5.

James:2020:RHQ

[31] Frederick James and Lorenzo Moneta. Review of high-quality random number generators. *Computing and Software for Big Science*, 4(1):2:1–2:12, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-019-0034-3.

Brehmer:2020:MML

[32] Johann Brehmer, Felix Kling, and Kyle Cranmer. MadMiner: Machine learning-based inference for particle physics. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-0035-2.

Berghaus:2020:HTC

[33] F. Berghaus, K. Casteels, and J. Weldon. High-throughput cloud computing with the cloudscheduler VM provisioning service. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-0036-1.

Wunsch:2020:RDN

[34] Stefan Wunsch, Simon Jörger, and Günter Quast. Reducing the dependence of the neural network function to systematic uncertainties in the input space. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-00037-9.

Andrews:2020:EEP

[35] M. Andrews, M. Paulini, and B. Poczos. End-to-end physics event classifi-

cation with CMS open data: Applying image-based deep learning to detector data for the direct classification of collision events at the LHC. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-020-00038-8`.

Aaij:2020:AHL

[36] R. Aaij, J. Albrecht, and M. Williams. Allen: a high-level trigger on GPUs for LHCb. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-020-00039-7`.

Migliorini:2020:MLP

[37] M. Migliorini, R. Castellotti, and M. Zanetti. Machine learning pipelines with modern big data tools for high energy physics. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-020-00040-0`.

Arrabito:2020:OCP

[38] Luisa Arrabito, Konrad Bernlöhr, and Guillaume Revy. Optimizing Cherenkov photons generation and propagation in CORSIKA for CTA Monte–Carlo simulations. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-020-00042-y`.

Sirunyan:2020:DNN

[39] A. M. Sirunyan, A. Tumasyan, and CMS Collaboration. A deep neural network for simultaneous estimation of b jet energy and resolution. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-020-00041-z`.

Spentzouris:2020:QCA

[40] Panagiotis Spentzouris. Quantum computing: Advancing fundamental physics. *Computing and Software for Big Science*, 4(1):??, December 2020. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-020-00043-x`.

Barrett:2021:BIO

[41] Matthew Barrett, Takanori Hara, and Prashant Shingade. The Belle II online–offline data operations system. *Computing and Software for Big Science*, 5 (1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-020-00045-9`.

Terashi:2021:ECQ

[42] Koji Terashi, Michiru Kaneda, and Junichi Tanaka. Event classification with quantum machine learning in high-energy physics. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-

2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-00047-7.

Amadio:2021:GRP

[43] G. Amadio, A. Ananya, and Y. Zhang. GeantV: Results from the prototype of concurrent vector particle transport simulation in HEP. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-00048-6.

Wunsch:2021:OSI

[44] Stefan Wunsch, Simon Jörger, and Günter Quast. Optimal statistical inference in the presence of systematic uncertainties using neural network optimization based on binned Poisson likelihoods with nuisance parameters. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-00049-5.

Ariza-Porras:2021:CMI

[45] Christian Ariza-Porras, Valentin Kuznetsov, and Federica Legger. The CMS monitoring infrastructure and applications. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-00051-x.

Kluth:2021:ETS

[46] Stefan Kluth. Education and training for software developers in particle physics. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-00046-8.

Boccali:2021:DDH

[47] T. Boccali, D. Cameron, and C. Wissing. Dynamic distribution of high-rate data processing from CERN to remote HPC data centers. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-00052-w.

Maddrell-Mander:2021:SPG

[48] Samuel Maddrell-Mander, Lakshan Ram Madhan Mohan, and Alexander Titterton. Studying the potential of graphcore (R) IPUs for applications in particle physics. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00057-z.

Freyermuth:2021:OHH

[49] Oliver Freyermuth, Peter Wienemann, and Klaus Desch. Operating an HPC/HTC cluster with fully containerized jobs using HTCondor, Singularity, CephFS and CVMFS. *Computing and Software for Big Science*, 5(1):??, De-

cember 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-020-00050-y.

Stanitzki:2021:PJH

[50] Marcel Stanitzki and Jan Strube. Performance of Julia for high energy physics analyses. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00053-3.

Iiyama:2021:DHS

[51] Yutaro Iiyama, Benedikt Maier, and Christoph Paus. Dynamo: Handling scientific data across sites and storage media. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00054-2.

WG:2021:CMC

[52] The HSF Physics Event Generator WG, Andrea Valassi, and Graeme A. Stewart. Challenges in Monte Carlo event generator software for high-luminosity LHC. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00055-1.

Buhmann:2021:GHH

[53] Erik Buhmann, Sascha Diefenbacher, and Katja Krüger. Getting high: High fidelity simulation of high granularity calorimeters with high speed. *Computing and Software for Big Science*, 5 (1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00056-0.

Bello:2021:EPN

[54] Francesco Armando Di Bello, Jonathan Shlomi, and Marumi Kado. Efficiency parameterization with neural networks. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00059-x.

Chen:2021:ASF

[55] C. Chen, O. Cerri, and M. Pierini. Analysis-specific fast simulation at the LHC with deep learning. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00060-4.

Reppin:2021:IAN

[56] J. Reppin, C. Beyer, and Y. Kemp. Interactive analysis notebooks on DESY batch resources. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/

article/10.1007/s41781-021-00058-y.

Kuznetsov:2021:MML

[57] Valentin Kuznetsov, Luca Giommi, and Daniele Bonacorsi. MLaaS4HEP: Machine learning as a service for HEP. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00061-3.

Andersson:2021:GAL

[58] Walter Ikegami Andersson, Adeel Akram, and Tobias Stockmanns. A generalized approach to longitudinal momentum determination in cylindrical straw tube detectors. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00064-0.

Aad:2021:ANN

[59] Georges Aad, Anne-Sophie Berthold, and Johann Christoph Voigt. Artificial neural networks on FPGAs for real-time energy reconstruction of the ATLAS LAr calorimeters. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00066-y.

Ai:2021:GBK

[60] Xiaocong Ai, Georgiana Mania, and Nicholas Styles. A GPU-based Kalman filter for track fitting. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00065-z.

Bartosik:2021:FDS

[61] Nazar Bartosik, Paolo Andreetto, and Lorenzo Sestini. Full detector simulation with unprecedented background occupancy at a muon collider. *Computing and Software for Big Science*, 5 (1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00067-x.

Malik:2021:STH

[62] Sudhir Malik, Samuel Meehan, and Siqi Yuan. Software training in HEP. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00069-9.

Osborn:2021:IAS

[63] Joseph D. Osborn, Anthony D. Frawley, and Haiwang Yu. Implementation of ACTS into sPHENIX track reconstruction. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-021-00068-w.

Freyermuth:2021:UJE

[64] Oliver Freyermuth, Katrin Kohl, and Peter Wienemann. Unleashing JupyterHub: Exploiting resources without inbound network connectivity using HTCondor. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00063-1`.

Peters:2021:ECP

[65] Andreas J. Peters and Daniel C. van der Ster. Evaluating CephFS performance vs. cost on high-density commodity disk servers. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00071-1`.

DeZoort:2021:CPT

[66] Gage DeZoort, Savannah Thais, and Peter Elmer. Charged particle tracking via edge-classifying interaction networks. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00073-z`.

Heredge:2021:QSV

[67] Jamie Heredge, Charles Hill, and Martin Sevior. Quantum support vector machines for continuum suppression in B meson decays. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00075-x`.

Giordano:2021:HBS

[68] Domenico Giordano, Manfred Alef, and Andrea Valassi. HEPiX benchmarking solution for WLCG computing resources. *Computing and Software for Big Science*, 5(1):??, December 2021. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00074-y`.

Aaij:2022:CCG

[69] R. Aaij, M. Adinolfi, S. Aiola, S. Akar, J. Albrecht, M. Alexander, S. Amato, Y. Amhis, F. Archilli, M. Bala, G. Bassi, L. Bian, M. P. Blago, T. Boettcher, A. Boldyrev, S. Borghi, A. Brea Rodriguez, L. Calefice, M. Calvo Gomez, D. H. Cámpora Pérez, A. Cardini, M. Cattaneo, V. Chobanova, G. Ciezarek, X. Cid Vidal, J. L. Cobbledick, J. A. B. Coelho, T. Colombo, A. Contu, B. Couturier, D. C. Craik, R. Currie, P. d'Argent, M. De Cian, D. Derkach, F. Dordei, M. Dorigo, L. Dufour, P. Durante, A. Dziurda, A. Dzyuba, S. Easo, S. Esen, P. Fernandez Declara, S. Filippov, C. Fitzpatrick, M. Frank, P. Gandini, V. V. Gligorov, E. Golobardes, G. Graziani, L. Grillo, P. A. Günther, S. Hansmann-Menzemer, A. M. Hennequin, L. Henry, D. Hill, S. E. Hollitt, J. Hu, W. Hulsbergen, R. J. Hunter, M. Hushchyn, B. K. Jashal, C. R. Jones, S. Klaver, K. Klimaszewski, R. Kopecna, W. Krzemien, M. Kucharczyk, R. Lane, F. Lazzari, R. Le Gac,

P. Li, J. H. Lopes, M. Lucio Martinez, A. Lupato, O. Lupton, X. Lyu, F. Machefert, O. Madejczyk, S. Malde, J. F. Marchand, S. Mariani, C. Marin Benito, D. Martinez Santos, F. Martinez Vidal, R. Matev, M. Mazurek, B. Mitreska, D. S. Mitzel, M. J. Morello, H. Mu, P. Muzzetto, P. Naik, M. Needham, N. Neri, N. Neufeld, N. S. Nolte, D. O'Hanlon, A. Oyanguren, M. Pepe Altarelli, S. Petrucci, M. Petruzzo, L. Pica, F. Pisani, A. Piucci, F. Polci, A. Poluektov, E. Polycarpo, C. Prouve, G. Punzi, R. Quagliani, R. I. Rabadan Trejo, M. Ramos Pernas, M. S. Rangel, F. Ratnikov, G. Raven, F. Reiss, V. Renaudin, P. Robbe, A. Ryzhikov, M. Santimaria, M. Saur, M. Schiller, R. Schwemmer, B. Sciascia, A. Solomin, F. Suljik, N. Skidmore, M. D. Sokoloff, P. Spradlin, M. Stahl, S. Stahl, H. Stevens, L. Sun, A. Szabelski, T. Szumlak, M. Szymanski, D. Y. Tou, G. Tuci, A. Usachov, N. Valls Canudas, R. Vazquez Gomez, S. Vecchi, M. Vesterinen, X. Vilasis-Cardona, D. Vom Bruch, Z. Wang, T. Wojton, M. Whitehead, M. Williams, M. Witek, Y. Xie, A. Xu, H. Yin, M. Zdybal, O. Zenaiev, D. Zhang, L. Zhang, and X. Zhu. A comparison of CPU and GPU implementations for the LHCb Experiment Run 3 trigger. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00070-2`.

Rossi:2022:DLS

[70] Marco Rossi and Sofia Vallecorsa. Deep learning strategies for ProtoDUNE raw data denoising. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00077-9`.

Aad:2022:EIA

[71] G. Aad, B. Abbott, and ATLAS Collaboration. Emulating the impact of additional proton–proton interactions in the ATLAS simulation by presampling sets of inelastic Monte Carlo events. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00062-2`.

Schwanekamp:2022:AIP

[72] Hendrik Schwanekamp, Ramona Hohl, and Jakob van Santen. Accelerating IceCube's photon propagation code with CUDA. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00080-8`.

Wegner:2022:SEC

[73] Tobias Wegner, Mario Lassnig, and Christian Zeitnitz. Simulation and evaluation of cloud storage caching for data intensive science. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00076-w`.

Enke:2022:SOD

[74] Harry Enke, Andreas Haungs, and Stefan Typel. Survey of open data concepts within fundamental physics: an initiative of the PUNCH4NFDI consortium. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00081-7`.

Aad:2022:ANG

[75] G. Aad, B. Abbott, and ATLAS Collaboration. AtlFast3: The next generation of fast simulation in ATLAS. *Computing and Software for Big Science*, 6 (1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00079-7`.

Ai:2022:CTS

[76] Xiaocong Ai, Corentin Allaire, and Jin Zhang. A common tracking software project. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-021-00078-8`.

Benato:2022:SDA

[77] Lisa Benato, Erik Buhmann, and Kai Zhou. Shared data and algorithms for deep learning in fundamental physics. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00082-6`.

Bird:2022:ACH

[78] Ian Bird, Simone Campana, and Graeme A. Stewart. Advances in computing in high energy and nuclear physics — invited papers from vCHEP 2021. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00083-5`.

Diefenthaler:2022:FTN

[79] Markus Diefenthaler and Torre Wenaus. Future trends in nuclear physics computing. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00085-3`.

Bogado:2022:MLS

[80] Joaquin Bogado, Mario Lassnig, and Javier Díaz. Modelling large-scale scientific data transfers. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00084-4`.

Khoo:2022:CFA

[81] T. J. Khoo, A. Reinsvold Hall, and S. Wertz. Constraints on future analysis metadata systems in high energy physics. *Computing and Soft-*

ware for Big Science, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00086-2`.

Cordero:2022:CCM

[82] Fernando Febres Cordero, Andreas von Manteuffel, and Tobias Neumann. Computational challenges for multi-loop collider phenomenology. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00088-0`.

Stein:2022:IRJ

[83] Annika Stein, Xavier Coubez, and Alexander Schmidt. Improving robustness of jet tagging algorithms with adversarial training. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00087-1`.

Clissa:2022:AWF

[84] Luca Clissa, Mario Lassnig, and Lorenzo Rinaldi. Analyzing WLCG file transfer errors through machine learning. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00089-z`.

Nachman:2022:WWH

[85] Benjamin Nachman. When, where, and how to open data: a personal perspective. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00090-6`.

Jung:2022:SDA

[86] Philipp Alexander Jung, Bernardo Ary dos Santos, Dominik Bergermann, Tim Graulich, Maximilian Lohmann, Andrzej Novák, Erdem Öz, Ali Riahinia, and Alexander Schmidt. Simulation of dielectric axion haloscopes with deep neural networks: a proof-of-principle. *Computing and Software for Big Science*, 6(1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00091-5`.

Wagner:2022:CAT

[87] Felix Wagner, Daniel Bartolot, Damir Rizvanovic, Florian Reindl, Jochen Schieck, and Wolfgang Waltenberger. Cait: Analysis toolkit for cryogenic particle detectors in Python. *Computing and Software for Big Science*, 6 (1):??, December 2022. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-022-00092-4`.

Amrouche:2023:TML

[88] Sabrina Amrouche, Laurent Basara, Dmitry Emeliyanov, Victor Estrade,

Steven Farrell, Cécile Germain, Vladimir Vava Gligorov, Tobias Golling, Sergey Gorbunov, Heather Gray, Isabelle Guyon, Mikhail Hushchyn, Vincenzo Innocente, Moritz Kiehn, Marcel Kunze, Edward Moyse, David Rousseau, Andreas Salzburger, Andrey Ustyuzhanin, and Jean-Roch Vlimant. The Tracking Machine Learning Challenge: Throughput phase. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00094-w`.

Barberis:2023:AE

[89] Dario Barberis, Igor Alexandrov, Zbigniew Baranowski, Luca Canali, Elizaveta Cherepanova, Gancho Dimitrov, Andrea Favareto, Álvaro Fernández Casaní, Elizabeth J. Gallas, Carlos García Montoro, Santiago González de la Hoz, Julius Hřivnáč, Alexander Iakovlev, Andrei Kazymov, Mikhail Mineev, Fedor Prokoshin, Grigori Rybkin, José Salt, Javier Sánchez, Roman Sorokoletov, Rainer Többicke, Petya Vasileva, Miguel Villaplana Perez, and Ruijun Yuan. The ATLAS EventIndex. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00096-8`.

Eich:2023:FCP

[90] Niclas Eich, Martin Erdmann, Dennis Noll, and Yannik Rath. Fast columnar physics analyses of terabyte-scale LHC data on a cache-aware Dask cluster. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00095-9`.

Wessner:2023:POH

[91] Jonas Weßner, Rüdiger Berlich, and Matthias F. M. Lutz. Parametric optimization on HPC clusters with Geneva. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00098-6`.

Bhimji:2023:SCF

[92] W. Bhimji, D. Carder, J. Duarte, I. Fisk, R. Gardner, C. Guok, B. Jayatilaka, T. Lehman, M. Lin, C. Maltzahn, S. McKee, M. S. Neubauer, O. Rind, O. Shadura, N. V. Tran, P. van Gemmeren, G. Watts, B. A. Weaver, and F. Würthwein. Snowmass 2021 Computational Frontier CompF4 Topical Group report storage and processing resource access. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00097-7`.

Aidala:2023:NWA

[93] Christine A. Aidala, Christopher Burr, Dillon S. Fitzgerald, Adam Morris, Sebastian Neubert, and Donijor Tropmann. Ntuple Wizard: an application to access large-scale open data

from LHCb. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00099-5`.

Sammel:2023:LID

[94] Dirk Sammel, Michael Boehler, Anton J. Gamel, and Markus Schumacher. Lightweight integration of a data cache for opportunistic usage of HPC resources in HEP workflows. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00100-1`.

Holmberg:2023:JEC

[95] Daniel Holmberg, Dejan Golubovic, and Henning Kirschenmann. Jet energy calibration with deep learning as a Kubeflow pipeline. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00103-y`.

Maglianella:2023:CAA

[96] Leandro Maglianella, Lorenzo Nicoletti, Christian Napoli, and Simone Scardapane. Convergent approaches to AI explainability for HEP muonic particles pattern recognition. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00102-z`.

Eschle:2023:PJP

[97] Jonas Eschle, Tamás Gál, Mosè Giordano, Philippe Gras, Benedikt Hegner, Lukas Heinrich, Uwe Hernandez Acosta, Stefan Kluth, Jerry Ling, Pere Mato, Mikhail Mikhasenko, Alexander Moreno Briceño, Jim Pivarski, Konstantinos Samaras-Tsakiris, Oliver Schulz, Graeme Andrew Stewart, Jan Strube, and Vassil Vassilev. Potential of the Julia programming language for high energy physics computing. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00104-x`.

Cai:2023:AML

[98] Tejin Cai, Kenneth Herner, and Nhan Tran. Accelerating machine learning inference with GPUs in ProtoDUNE data processing. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00101-0`.

Pardinas:2023:GDF

[99] Julián García Pardiñas, Marta Calvi, and Nicola Serra. GNN for deep full event interpretation and hierarchical reconstruction of heavy-hadron decays in proton–proton collisions. *Computing and Software for Big Science*, 7 (1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.`

com/article/10.1007/s41781-023-00107-8.

Wemmer:2023:PRB

[100] F. Wemmer, I. Haide, and R. Volpe. Photon reconstruction in the Belle II calorimeter using graph neural networks. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-023-00105-w.

Crippa:2023:QAC

[101] Arianna Crippa, Lena Funcke, and Yee Chinn Yap. Quantum algorithms for charged particle track reconstruction in the LUXE experiment. *Computing and Software for Big Science*, 7(1):??, December 2023. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-023-00109-6.

Barnyakov:2024:FSS

[102] Alexander Barnyakov, Maria Belozyorova, and Daniil Zhadan. Fast simulation for the super Charm-Tau factory detector. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-023-00108-7.

Balunas:2024:FEA

[103] William Balunas, Donatella Cavalli, and Sarah Williams. A flexible and efficient approach to missing transverse momentum reconstruction. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-023-00110-z.

Esmail:2024:KKF

[104] Waleed Esmail, Jana Rieger, and Karin Schönning. KinFit: a kinematic fitting package for hadron physics experiments. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-023-00112-x.

Maeno:2024:PPD

[105] Tadashi Maeno, Aleksandr Alekseev, and Xin Zhao. PanDA: Production and distributed analysis system. *Computing and Software for Big Science*, 8 (1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00114-3.

Allaire:2024:AIE

[106] C. Allaire, R. Ammendola, and P. Zurita. Artificial intelligence for the electron ion collider (AI4EIC). *Computing and Software for Big Science*, 8 (1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00113-4.

Mathad:2024:FNT

[107] Abhijit Mathad, Martina Ferrillo, and Nicola Serra. FunTuple: a new N-tuple

component for offline data processing at the LHCb experiment. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-024-00116-1`.

TheATLASCollaboration:2024:DGM

[108] The ATLAS Collaboration. Deep generative models for fast photon shower simulation in ATLAS. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00106-9`.

Neu:2024:RTG

[109] Marc Neu, Jürgen Becker, and Kai Unger. Real-time graph building on FPGAs for machine learning trigger applications in particle physics. *Computing and Software for Big Science*, 8 (1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-024-00117-0`.

TheATLASCollaboration:2024:SPA

[110] The ATLAS Collaboration, G. Aad, and L. Zwalinski. Software performance of the ATLAS track reconstruction for LHC Run 3. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-023-00111-y`.

Angloher:2024:OOC

[111] G. Angloher, S. Banik, and W. Waltenberger. Optimal operation of cryogenic calorimeters through deep reinforcement learning. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-024-00119-y`.

TheCMSECALCollaboration:2024:ABA

[112] The CMS ECAL Collaboration. Autoencoder-based anomaly detection system for online data quality monitoring of the CMS electromagnetic calorimeter. *Computing and Software for Big Science*, 8 (1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-024-00118-z`.

Rogachev:2024:SMS

[113] Alexander Rogachev and Fedor Ratnikov. Soft margin spectral normalization for GANs. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL `https://link.springer.com/article/10.1007/s41781-024-00120-5`.

Pfeffer:2024:CSS

[114] Emanuel Pfeffer, Michael Waßmer, and Ulrich Husemann. A case study of sending graph neural networks back to the test bench for applications in high-energy particle physics. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-

2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00122-3.

Savard:2024:OHT

[115] Claire Savard, Nicholas Manganelli, and Keith Ulmer. Optimizing high-throughput inference on graph neural networks at shared computing facilities with the NVIDIA triton inference server. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00123-2.

Daumann:2024:OFC

[116] Caio Daumann, Mauro Donega, and Davide Valsecchi. One flow to correct them all: Improving simulations in high-energy physics with a single normalising flow and a switch. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00125-0.

Okawa:2024:QAI

[117] Hideki Okawa, Qing-Guo Zeng, and Man-Hong Yung. Quantum-annealing-inspired algorithms for track reconstruction at high-energy colliders. *Computing and Software for Big Science*, 8 (1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00126-z.

CMSCollaboration:2024:PAC

[118] The CMS Collaboration, A. Hayrapetyan, and A. Zhokin. Portable acceleration of CMS computing workflows with coprocessors as a service. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00124-1.

Taylor:2024:TRF

[119] Jenny Taylor, Michael Papenbrock, and the PANDA Collaboration. 4D track reconstruction on free-streaming data with PANDA at FAIR. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00127-y.

CMSCollaboration:2024:CSA

[120] CMS Collaboration. The CMS statistical analysis and combination tool: Combine. *Computing and Software for Big Science*, 8(1):??, December 2024. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00121-4.

Wojnar:2025:FSZ

[121] Maksymilian Wojnar, Emilia Majerz, and Witold Dzwinel. Fast simulation of the zero degree calorimeter responses with generative neural networks. *Computing and Software for Big Science*, 9(1):??, December

2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00130-x.

Aad:2025:TCO

[122] G. Aad, E. Aakvaag, and The ATLAS Collaboration. Total cost of ownership and evaluation of Google Cloud resources for the ATLAS experiment at the LHC. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00128-x.

Shi:2025:PED

[123] Qianqian Shi, Teng Li, and Xingtao Huang. Parallelized event data management system based on MT-SNiPER framework and PODIO. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00131-w.

Stein:2025:FFA

[124] Eloise Stein, Quentin Bramas, and Cristel Pelsser. FORS: fault-adaptive optimized routing and scheduling for DAQ networks. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-024-00129-w.

Gudu:2025:ESS

[125] Diana Gudu, Marcus Hardt, and Gabriel Zachmann. Enabling secure shell access with OpenID connect. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00136-5.

Reuter:2025:EEM

[126] L. Reuter, G. De Pietro, and L. Zani. End-to-end multi-track reconstruction using graph neural networks at Belle II. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00135-6.

Evans:2025:ABD

[127] T. Evans, C. Fitzpatrick, and J. Horswill. An automated bandwidth division for the LHCb upgrade trigger. *Computing and Software for Big Science*, 9 (1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00139-2.

Zachmann:2025:OAI

[128] Gabriel Zachmann, Marcus Hardt, and Diana Gudu. `oidc-agent` — integrating OpenID connect tokens with the command line. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/

article/10.1007/s41781-025-00137-4.

Erdmann:2025:KWI

[129] Johannes Erdmann, Florian Mausolf, and Jan Lukas Späh. KAN we improve on HEP classification tasks? Kolmogorov–Arnold networks applied to an LHC physics example. *Computing and Software for Big Science*, 9 (1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00138-3.

Kholoimov:2025:DVA

[130] V. Kholoimov, B. Kishor Jashal, and J. Zhuo. A downstream and vertexing algorithm for long lived particles (LLP) selection at the first high level trigger (HLT1) of LHCb. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00141-8.

Hellwig:2025:PFF

[131] Denise Hellwig, Stefan Schoppmann, and Christopher Wiebusch. PhyLiNO : a forward-folding likelihood-fit framework for neutrino oscillation physics. *Computing and Software for Big Science*, 9 (1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00142-7.

Tsoi:2025:SAP

[132] Ho Fung Tsoi, Dylan Rankin, and Vladimir Loncar. SymbolFit: Automatic parametric modeling with symbolic regression. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00140-9.

Sobol:2025:PPP

[133] Bartosz Soból, Michael Papenbrock, and Grzegorz Korcyl. Performance portability of the particle tracking algorithm using SYCL. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00143-6.

Ciangottini:2025:AFH

[134] D. Ciangottini, A. C. Forti, and G. Watts. Analysis facilities for the HL-LHC white paper. *Computing and Software for Big Science*, 9(1):??, December 2025. CODEN ???? ISSN 2510-2036 (print), 2510-2044 (electronic). URL https://link.springer.com/article/10.1007/s41781-025-00133-8.