

# Wei-Keng Liao

## List of Publications by Year in descending order

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Version: 2024-02-01

71  
papers

2,250  
citations

623734

14  
h-index

552781

26  
g-index

72  
all docs

72  
docs citations

72  
times ranked

2173  
citing authors

#	ARTICLE	IF	CITATIONS
1	Moving closer to experimental level materials property prediction using AI. Scientific Reports, 2022, 12, .	3.3	14
2	Enabling deeper learning on big data for materials informatics applications. Scientific Reports, 2021, 11, 4244.	3.3	29
3	SIGRNN: Synthetic Minority Instances Generation in Imbalanced Datasets using a Recurrent Neural Network. , 2021, , .		1
4	Enhancing Phase Mapping for High-throughput X-ray Diffraction Experiments using Fuzzy Clustering. , 2021, , .		1
5	Cross-property deep transfer learning framework for enhanced predictive analytics on small materials data. Nature Communications, 2021, 12, 6595.	12.8	55
6	Optimizing Performance of Parallel I/O Accesses to Non-contiguous Blocks in Multiple Array Variables. , 2021, , .		2
7	Learning to Predict Crystal Plasticity at the Nanoscale: Deep Residual Networks and Size Effects in Uniaxial Compression Discrete Dislocation Simulations. Scientific Reports, 2020, 10, 8262.	3.3	14
8	Improving MPI Collective I/O for High Volume Non-Contiguous Requests With Intra-Node Aggregation. IEEE Transactions on Parallel and Distributed Systems, 2020, 31, 2682-2695.	5.6	8
9	Improving All-to-Many Personalized Communication in Two-Phase I/O. , 2020, , .		5
10	IRNet. , 2019, , .		23
11	Property Prediction of Organic Donor Molecules for Photovoltaic Applications Using Extremely Randomized Trees. Molecular Informatics, 2019, 38, e1900038.	2.5	31
12	Deep learning based domain knowledge integration for small datasets: Illustrative applications in materials informatics. , 2019, , .		9
13	Scalable Algorithms for MPI Intergroup Allgather and Allgather. Parallel Computing, 2019, 85, 220-230.	2.1	5
14	Peak Area Detection Network for Directly Learning Phase Regions from Raw X-ray Diffraction Patterns. , 2019, , .		10
15	A Real-Time Iterative Machine Learning Approach for Temperature Profile Prediction in Additive Manufacturing Processes. , 2019, , .		29
16	Data-Driven Insights from Predictive Analytics on Heterogeneous Experimental Data of Industrial Magnetic Materials. , 2019, , .		2
17	Transfer Learning Using Ensemble Neural Networks for Organic Solar Cell Screening. , 2019, , .		11
18	Enhancing materials property prediction by leveraging computational and experimental data using deep transfer learning. Nature Communications, 2019, 10, 5316.	12.8	160

#	ARTICLE	IF	CITATIONS
19	Establishing structure-property localization linkages for elastic deformation of three-dimensional high contrast composites using deep learning approaches. <i>Acta Materialia</i> , 2019, 166, 335-345.	7.9	125
20	Microstructure optimization with constrained design objectives using machine learning-based feedback-aware data-generation. <i>Computational Materials Science</i> , 2019, 160, 334-351.	3.0	41
21	Data Sampling Schemes for Microstructure Design with Vibrational Tuning Constraints. <i>AIAA Journal</i> , 2018, 56, 1239-1250.	2.6	9
22	Full-Duplex Inter-Group All-to-All Broadcast Algorithms with Optimal Bandwidth. , 2018, , .		2
23	A new hybrid technique for modeling dense star clusters. <i>Computational Astrophysics and Cosmology</i> , 2018, 5, .	22.7	12
24	ElemNet: Deep Learning the Chemistry of Materials From Only Elemental Composition. <i>Scientific Reports</i> , 2018, 8, 17593.	3.3	242
25	Extracting Grain Orientations from EBSD Patterns of Polycrystalline Materials Using Convolutional Neural Networks. <i>Microscopy and Microanalysis</i> , 2018, 24, 497-502.	0.4	46
26	Deep learning approaches for mining structure-property linkages in high contrast composites from simulation datasets. <i>Computational Materials Science</i> , 2018, 151, 278-287.	3.0	219
27	Reducing I/O variability using dynamic I/O path characterization in petascale storage systems. <i>Journal of Supercomputing</i> , 2017, 73, 2069-2097.	3.6	10
28	A flexible I/O arbitration framework for netCDF-based big data processing workflows on high-end supercomputers. <i>Concurrency Computation Practice and Experience</i> , 2017, 29, e4161.	2.2	10
29	Towards Identifying Informal Caregivers of Alzheimer's and Dementia Patients in Social Media. , 2017, , .		1
30	Parallel Deep Convolutional Neural Network Training by Exploiting the Overlapping of Computation and Communication. , 2017, , .		21
31	Analyzing Informal Caregiving Expression in Social Media. , 2017, , .		2
32	Building Halo Merger Trees from the Q Continuum Simulation. , 2017, , .		2
33	Parallel Implementation of Lossy Data Compression for Temporal Data Sets. , 2016, , .		3
34	PinterNet: A thematic label curation tool for large image datasets. , 2016, , .		1
35	Materials discovery: Understanding polycrystals from large-scale electron patterns. , 2016, , .		17
36	Parallel DTFE Surface Density Field Reconstruction. , 2016, , .		6

#	ARTICLE	IF	CITATIONS
37	HACC: Simulating sky surveys on state-of-the-art supercomputing architectures. <i>New Astronomy</i> , 2016, 42, 49-65.	1.8	166
38	IOPro: a parallel I/O profiling and visualization framework for high-performance storage systems. <i>Journal of Supercomputing</i> , 2015, 71, 840-870.	3.6	0
39	NUMARCK: Machine Learning Algorithm for Resiliency and Checkpointing. , 2014, , .		43
40	High performance data clustering: a comparative analysis of performance for GPU, RASC, MPI, and OpenMP implementations. <i>Journal of Supercomputing</i> , 2014, 70, 284-300.	3.6	14
41	Dynamic file striping and data layout transformation on parallel system with fluctuating I/O workload. , 2013, , .		1
42	A PARALLEL MONTE CARLO CODE FOR SIMULATING COLLISIONAL $N$ -BODY SYSTEMS. <i>Astrophysical Journal, Supplement Series</i> , 2013, 204, 15.	7.7	70
43	Improving collective I/O performance by pipelining request aggregation and file access. , 2013, , .		7
44	A case study for scientific I/O: improving the FLASH astrophysics code. <i>Computational Science &amp; Discovery</i> , 2012, 5, 015001.	1.5	26
45	GPU-accelerated Monte Carlo simulations of dense stellar systems. , 2012, , .		2
46	IOPin: Runtime Profiling of Parallel I/O in HPC Systems. , 2012, , .		15
47	Parallel hierarchical clustering on shared memory platforms. , 2012, , .		16
48	Delegation-Based I/O Mechanism for High Performance Computing Systems. <i>IEEE Transactions on Parallel and Distributed Systems</i> , 2012, 23, 271-279.	5.6	16
49	Community Dynamics and Analysis of Decadal Trends in Climate Data. , 2011, , .		6
50	Supporting computational data model representation with high-performance I/O in parallel netCDF. , 2011, , .		6
51	Design and Evaluation of MPI File Domain Partitioning Methods under Extent-Based File Locking Protocol. <i>IEEE Transactions on Parallel and Distributed Systems</i> , 2011, 22, 260-272.	5.6	17
52	High Performance Data Mining Using R on Heterogeneous Platforms. , 2011, , .		11
53	Efficient pairwise statistical significance estimation for local sequence alignment using GPU. , 2011, , .		13
54	pFANGS: Parallel high speed sequence mapping for Next Generation 454-roche Sequencing reads. , 2010, , .		3

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55	Enabling active storage on parallel I/O software stacks. , 2010, , .		36
56	HIGH UTILITY ITEMSETS MINING. International Journal of Information Technology and Decision Making, 2010, 09, 905-934.	3.9	13
57	Combining I/O operations for multiple array variables in parallel netCDF. , 2009, , .		13
58	Using Subfiling to Improve Programming Flexibility and Performance of Parallel Shared-file I/O. , 2009, , .		23
59	Dynamically adapting file domain partitioning methods for collective I/O based on underlying parallel file system locking protocols. , 2008, , .		56
60	Scaling parallel I/O performance through I/O delegate and caching system. , 2008, , .		45
61	Improving MPI Independent Write Performance Using A Two-Stage Write-Behind Buffering Method. , 2007, , .		6
62	An Implementation and Evaluation of Client-Side File Caching for MPI-IO. , 2007, , .		33
63	A New Flexible MPI Collective I/O Implementation. , 2006, , .		19
64	Scalable Design and Implementations for MPI Parallel Overlapping I/O. IEEE Transactions on Parallel and Distributed Systems, 2006, 17, 1264-1276.	5.6	10
65	Efficient structured data access in parallel file systems. , 2003, , .		44
66	Parallel netCDF. , 2003, , .		280
67	Design and evaluation of a parallel HOP clustering algorithm for cosmological simulation. , 0, , .		3
68	Processor-embedded distributed MEMS-based storage systems for high-performance I/O. , 0, , .		2
69	Scalable high-level caching for parallel I/O. , 0, , .		13
70	Design and Evaluation of Database Layouts for MEMS-Based Storage Systems. , 0, , .		0
71	Collective caching: application-aware client-side file caching. , 0, , .		42