SHORT CV OF BIN DONG

Education

- Ph.D in Mathematics
  University of California, Los Angeles, 2005–2009.
- M.Sc. in Mathematics
  National University of Singapore, 2003–2005.
- B.S. in Mathematics
  Peking University, 1999–2003.

Positions

- Professor, Beijing International Center for Mathematical Research,
  Peking University, 2023 - present.
- Deputy Director, Center for Machine Learning Research, Peking University,
  2022 - present.
- Director, Center for Theory of Artificial Intelligence, Institute for Artificial Intelligence,
  Peking University, 2019 - 2022.
- Associate Professor (Tenured), Beijing International Center for Mathematical Research,
  Peking University, 2018 - 2022.
- Associate Professor (w/o Tenure), Beijing International Center for Mathematical Research,
  Peking University, 2014 - 2018.
- Assistant Professor, Department of Mathematics, The University of Arizona
  2011 - 2014.
- SEW Assistant Professor, Department of Mathematics, UCSD
  2009 - 2011.

Research Interests

- Computational imaging
- Scientific computing
- Machine learning

Honors and Awards

- New Cornerstone Investigator, The New Cornerstone Investigator Program, 2023.
- Invited Sectional Lecture, The International Congress of Mathematicians, 2022.
- Qiu Shi Outstanding Young Scholar Award, Qiu Shi Foundation, Hongkong, China, 2014.

Journal Editorial Service

- Associate editor, Journal of Machine Learning, 2022–.
- Associate editor, Journal of Computational Mathematics, 2021–2023
- Associate editor, CSIAM Transactions on Applied Mathematics, 2019–2021
- Editorial board, Inverse Problems and Imaging, AIMS, 2018–2020.
- Guest editor, Applied and Computational Harmonic Analysis, Elsevier, 2015–2016.

Selected Talks

- Plenary talk. The 21st Annual Meeting of the China Society for Industrial and Applied Mathematics (CSIAM), Kunming, China, Oct. 12-15, 2023.
- Plenary talk. The 13th Annual Meeting of the China Society for Computational Mathematics (CSCM), Nanking, China, July 15-19, 2023.
- 45-minutes invited talk, International Congress of Mathematicians (ICM), July 6–14, 2022.
- Invited talk. workshop on "Deep learning and partial differential equations", the Isaac Newton Institute for Mathematical Sciences (INI), the University of Cambridge, November 15-19, 2021.
- Plenary talk. 3rd Annual "Deep Recon Workshop", Massachusetts General Hospital and CAM-CA, Harvard University, November 14-15, 2021.
- Invited talk. "New trends in numerical multiscale methods and beyond", Institut Mittag-Leffler, Djursholm, Sweden, July 12-July 16, 2021.
- Invited talk. "Workshop on Mathematical Machine Learning and Applications", Penn State University, December 14-16, 2020 (http://sites.psu.edu/ccma/2020workshop/).

- Invited talk. SIAM Conference on Imaging Science, minisymposium on "Data Inferred and Physics-Based Models in Imaging", Toronto, Canada, July 6–9, 2020.
- Invited talk. Deep learning and partial differential equations, American Institute for Mathematics, San Jose, CA, October 14-18, 2019.
- Plenary talk. The Second National Conference on Big Data and Artificial Intelligence, CSIAM, Kunming, China, July 5-7, 2019.
- Plenary talk. The 11th National Conference on Inverse Problems, Imaging and Applications, Lanzhou, China, June 22-24, 2019.
- Invited talk. The Third International Conference on Mathematics of Data Science (MathoDS 3), City University of Hong Kong (CityU), June 19-23, 2019.
- Invited talk. Inverse Problems, Imaging and PDE's, Institute for Advanced Studies, Hong Kong University of Science and Technology, May 20-24, 2019.
- Invited talk. Workshop on Geometry of Big Data, IPAM, UCLA, USA, April 29-May 3, 2019.
- Invited talk. SIAM Annual Meeting. Minisymposium on "Machine Learning for Scientific Computing", Portland, Oregon, USA, July 9–13, 2018.
- Invited talk and lectures. Data Sciences: bridging mathematics, physics and biology, Institute for Mathematical Sciences, National University of Singapore, Singapore, May 29– June 16, 2017.
- Invited talk. Wavelets and Sparsity XVI, SPIE Optics & Photonics 2015. San Diego, CA, USA, August 9-13, 2015.

Selected Publications

1. Xiang Huang, Zhanhong Ye, Hongsheng Liu, Beiji Shi, Zidong Wang, Kang Yang, Yang Li, Bingya Weng, Min Wang, Haotian Chu, Jing Zhou, Fan Yu, Bei Hua, Lei Chen, Bin Dong, *Meta-Auto-Decoder for Solving Parametric Partial Differential Equations*, NeurIPS 2022, spotlight (arXiv:2111.08823).
2. Ziju Shen, Yufei Wang, Dufan Wu, Xu Yang and Bin Dong, *Learning to Scan: A Deep Reinforcement Learning Approach for Personalized Scanning in CT Imaging*, Inverse Problems and Imaging, **16(1)**, 179, 2022 (arXiv:2006.02420).
3. Zichao Long, Yiping Lu and Bin Dong, *PDE-Net 2.0: Learning PDEs from Data with A Numeric-Symbolic Hybrid Deep Network*, Journal of Computational Physics, 399, 108925, 2019.
4. Dinghuai Zhang, Tianyuan Zhang, Yiping Lu, Zhanxing Zhu, Bin Dong, *You Only Propagate Once: Accelerating Adversarial Training Using Maximal Principle*, NeurIPS 2019
5. Yiping Lu, Aoxiao Zhong, Quanzheng Li and Bin Dong, *Beyond Finite Layer Neural Networks: Bridging Deep Architectures and Numerical Differential Equations*, Thirty-fifth International Conference on Machine Learning (ICML), 2018.
6. Zichao Long, Yiping Lu, Xianzhong Ma and Bin Dong, *PDE-Net: Learning PDEs from Data*, Thirty-fifth International Conference on Machine Learning (ICML), 2018.
7. Bin Dong, Qingtang Jiang and Zuowei Shen, *Image restoration: wavelet frame shrinkage, nonlinear evolution PDEs, and beyond*, Multiscale Modeling and Simulation: A SIAM Interdisciplinary Journal, 15(1), 606–660, 2017.
8. Bin Dong, *Sparse Representation on Graphs by Tight Wavelet Frames and Applications*, Applied and Computational Harmonic Analysis, 42(3), 452C-479, 2017.
9. Jian-Feng Cai, Bin Dong and Zuowei Shen, *Image restoration: A wavelet frame based model for piecewise smooth functions and beyond*, Applied and Computational Harmonic Analysis, 41(1), 94–138, 2016.
10. Jian-Feng Cai, Bin Dong, Stanley Osher and Zuowei Shen, *Image restoration: total variation; wavelet frames; and beyond*, Journal of the American Mathematical Society, **25(4)**, 1033–1089, 2012.