Zhibing Zhao

Ph.D. Student

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Research Interests

- Learning to Rank
- Machine Learning
- Statistical Inference
- Artificial Intelligence

Education

2015–Present **Ph.D., Computer Science**, *Rensselaer Polytechnic Institute*, Troy, NY, US.

2012–2014 **M.S., Electrical Engineering**, *University of Connecticut*, Storrs, CT, US.

2008–2012 **B.Eng., Electrical Engineering**, *Tsinghua University*, Beijing, China.

Experience

2015–Present **Research Assistant**, Rensselaer Polytechnic Institute, Troy, NY, US.

Proved theorems on identifiability of mixtures of random utility models, designed algorithms to efficiently learn mixtures of random utility models.

- (Accepted by AAAI 2018) Learning mixtures of random utility models:
  - First theorems characterizing non-identifiability and generic identifiability;
  - Efficient algorithms: generalized-method-of-moments (GMM), EM-based algorithm (E-GMM), and the sandwich algorithm.
  - Comparisons of model fitness of different models on Preflib data.
- (Published ICML 2016 and still ongoing) Learning mixtures of Plackett-Luce models:
  - First theorems characterizing non-identifiability, identifiability and generic identifiability;
  - Efficient algorithms: generalized-method-of-moments (GMM), EM-based algorithms.

2012–2014 **Research Assistant**, University of Connecticut, Storrs, CT, US.

Life-oriented control strategy design for a tidal current energy system:

- Modeling and small signal analysis;
- Simulations with Simulink and OPAL-RT real-time simulator;
- Hardware-in-the-loop simulations.

2011–2012 **Research Assistant**, Tsinghua University, Beijing, China.

- Cascade DC/DC converter in microgrid applications: modeling and controller design;
- Simulations performed with MATLAB/Simulink. Experiments completed using DSP TMS320F2812.

Publications

Journal Papers

1. Taofeek Orekan, **Zhibing Zhao**, Peng Zhang, Jian Zhang, Shengli Zhou, and Jun-Hong Cui, "Maximum Lifecycle Tracking for Tidal Energy Generation System", *Electric Power Components and Systems*, 2015.

2. Gengfeng Li, Peng Zhang, Peter B. Luh, Wenyuan Li, Zhaohong Bie, Camilo Serna, and **Zhibing Zhao**, "Risk Analysis for Distribution Systems in the Northeast U. S. Under Wind Storms", *IEEE Transactions on Power Systems*, 2014.

Archival Conference Papers

⋆ 3. **Zhibing Zhao**, Tristan Villamil, and Lirong Xia, "Learning Mixtures of Random Utility Models", in *Proceedings of the 32nd AAAI Conference on Artificial Intelligence* **(AAAI-18)**.

⋆ 4. **Zhibing Zhao**, Peter Piech, and Lirong Xia, "Learning Mixtures of Plackett-Luce Models", in *Proceedings of the 33rd International Conference on Machine Learning* **(ICML-16)**.

5. **Zhibing Zhao**, Peng Zhang, Jun-Hong Cui and Shengli Zhou, "Life-Oriented Control of Tidal Power Generation", *OCEANS*, 2013.

6. **Zhibing Zhao**, Yongdong Li and Bo Dong, "Modeling and Control Strategy for Cascade Bi-directional DC/DC Converter in Microgrid", *IPEMC*, 2012.

7. Mo Li, Jiansheng Yuan and **Zhibing Zhao**, "Low-Voltage SPD Coordination Analysis", *APL*, 2011.

Workshop Papers

8. Chunheng Jiang, Sujoy Sikdar, Hejun Wang, Lirong Xia and **Zhibing Zhao**, "Practical Algorithms for Computing STV and Other Multi-Round Voting Rules", In *the 4th Workshop on Exploring Beyond the Worst Case in Computational Social Choice* (EXPLORE-2017).

Presentations

Oral Presentations

1. "Computing Optimal Bayesian Decisions for Rank Aggregation via MCMC Sampling", workshop of the 16th ACM Conference on Economics and Computation (EC-15).

Poster Presentations

2. "Learning Mixtures of Random Utility Models", AAAI-18 and CAEC-17.
3. "Computing Optimal Bayesian Decisions for Rank Aggregation via MCMC Sampling", workshop of the 31st Conference on Uncertainty in Artificial Intelligence (UAI-15).

Skills

Programming Languages	Python, MATLAB, C, C++
Operating Systems	Microsoft Windows, macOS, Ubuntu
Languages	Mandarin Chinese (native), English (professional)

Professional Service

Reviewed papers for AAMAS2018