Shuo YANG

Department of Computer Science, University of Texas at Austin

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EDUCATION EXPERIENCE

Department of Computer Science, University of Texas, Austin *08/2018 – Now*

- Ph.D. student. Advisor: Sujay Sanghavi

Department of Electrical Engineering, Tsinghua University, Beijing *08/2014 – 07/2018*

- Major GPA: 92.35 Top 3 out of 140 in department.

School of Economics and Management, Tsinghua University, Beijing *09/2015 – 07/2018*

- Double Major in Economics

Electrical and Computer Engineering, University of Texas, Austin *01/2017 – 05/2017*

- GPA: 4.0 International Exchange Student Program.

RLAI Lab, University of Alberta *07/2017 – 09/2017*

- Summer internship, supervised by Richard Sutton.

GRADUATE COURSES

Spring, 2019

- EE381V Large-Scale Optimization II (Prof. Constantine Caramanis)
- CS388G Algorithm: Techniques and Theory (Prof. Greg Plaxton)
- SDS384 Theoretical Statistics (Prof. Purnamrita Sarkar)

Fall, 2018

- EE381V Large-Scale Optimization I (Prof. Sujay Sanghavi)
- EE381J Probability and Stochastic Process (Prof. Sanjay Shakkottai)

RESEARCH INTEREST

Theoretical machine learning, Optimization, sequential decision making under uncertainty.

RESEARCH EXPERIENCE

Quadratic Lasso Regression with Sub-quadratic Time *09/2018 – Now*

Advisor: Professor Sujay Sanghavi, University of Texas *Austin, US*

- Developed a sub-linear time gradient estimation method based on the quadratic model.
- Combining the gradient estimation with iterative hard threshold, obtained a provable linear convergence rate.

Electrical Market Equilibrium Analysis with Accelerated Gradient Descent *09/2017 – 07/2018*

Advisor: Professor Qixin CHEN, Chongqing KANG, Tsinghua University *Beijing, CN*

- In submission to 2019 IEEE PES General Meeting.
- The new method framed the electrical market bidding in a reduced form, gives a simple and accurate market model for equilibrium calculation
- Integrated accelerated gradient descent algorithm to solve for the market equilibrium.
- Accomplished the market analysis for a 145-Nodes system, with multiple agents and multiple biding periods.

Reinforcement Learning: Fast Planning with Linear Dyna *07/2017 – 09/2017*

Advisor: Professor Richard Sutton, University of Alberta *Edmonton, CA*

- Developed a new planning method under the linear Dyna architecture.
- New method achieved same data efficiency as previous Dyna method with linear time complexity and constant per-step computation. Suitable for large scale, long-term learning.
- Developed a novel extension to the control problem, with empirical results showing both high data efficiency and computation efficiency.

Automatic Curriculum Generation in Reinforcement Learning *02/2017 – 07/2017*

Advisor: Professor Peter Stone, University of Texas *Austin, US*

- Designed a method to generate agent-specific curriculum automatically. Empirical results have demonstrated a 40% learning efficiency increase.
- Improved the experiment environment setting, which extends the previous experiment to a complex domain and allows for a more flexible configuration of tasks.

HONORS AND AWARDS

Nominated for Tsinghua Prestigious Scholarship *2017*

"Tang Lixin" Scholarship *2016*

China Scholarship Council Excellent Undergraduate Fellowship *2016*

National Scholarship *2015*

Meritorious Winner of Interdisciplinary Contest in Modeling *2015*