Curriculum Vitae || Chacha Chen

IST Department, PSU
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Education

- **Pennsylvania State University** — State College, USA
  PhD. in Informatics — *Sep.2019 – Now*
  - **Advisor**: Prof. **Zhenhui (Jessie) Li**
- **Shanghai Jiao Tong University** — Shanghai, China
  B.E. in Computer Science — *Sep.2015 – Jun.2019*
  - **GPA**:87.1/100 (3.68/4.0)
  - **Advisor**: Prof. **Weinan Zhang** and Prof. **Zhenhui (Jessie) Li** (Penn State University)
- **Technical University of Munich** — Munich, Germany
  Exchange Student in Department of Informatics — *Apr.2017 – Sep.2017*

Research Interests

- **Data Mining, Reinforcement Learning, Applied Machine Learning**

Submissions & Pre-prints

- **Chacha Chen**, Hua Wei, Nan Xu, Guanjie Zheng, Ming Yang, Yuanhao Xiong, Kai Xu and Zhenhui Li, Toward A Thousand Lights: Decentralized Deep Reinforcement Learning for Large-Scale Traffic Signal Control, in Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI'20), New York, the United States, February 2020. (Acceptance rate: 1591/7737=20.6%)
- Hua Wei, Nan Xu, Huichu Zhang, Guanjie Zheng, Xinshi Zang, **Chacha Chen**, Weinan Zhang, Yanmin Zhu, Kai Xu and Zhenhui Li, CoLight: Learning Network-level Cooperation for Traffic Signal Control, in Proceedings of the 2019 ACM on Cocnference on Information and Knowledge Management (CIKM'19), Beijing, China, November 2019. (Acceptance rate: 200/1030=19.4%)
- Hua Wei*, **Chacha Chen**, Guanjie Zheng, Kan Wu, Vikash V. Gayah, Kai Xu and Zhenhui Li, PressLight: Learning Max Pressure Control to Coordinate Traffic Signals in Arterial Network. In Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'19), Anchorage, AK, USA, Aug 2019. (Research track, acceptance rate: 170/1200=14.2%)

Research Experience

- **Deep Reinforcement Learning for Traffic Signal Control** — Hangzhou, China
  Research Intern, Advisor: ***Prof. Zhenhui (Jessie) Li*** — *Jul.2018 - Jul.2019*
  - Designed and implemented a reinforcement learning (RL) approach with justification on state and reward design for multi-intersection traffic signal control along arterials
  - Draw a connection between RL method and classical transportation theory for the first time
  - Justified our RL model in comparison to the closed form solution under the same simplified experiment settings

- Outperformed state-of-the-art approach by 11.96% in terms of the average travel time of vehicles on real-world traffic data
- Started conducting field experiments in Hangzhou China

- **Mining Homeownership Patterns** Shanghai, China
  Research Assistant, Advisor: ***Prof. Tingting Lu*** *and* ***Prof. Weinan Zhang*** *Mar.2018 - Present*
  - Formulated the task into a multi-class classification problem in machine learnig based on the data collected from a national scale survey
  - Implemented logistic regression and tree model to predict the homeownership
  - Interpreted the machine learning models with feature ranking and visualization which further reveals the mechanism and pattern of homeownership

- **SVM Toolbox for Indefinite and Semi-definite Kernel Learning** Shanghai, China
  Research Assistant, Advisor: ***Prof. Xiaolin Huang*** *Sep.2017 - Mar.2018*
  - Coauthored a software package which accommodates Support Vector Machine (SVM) classification algorithms with indefinite kernels and semi-definite kernels
  - Incorporated Sequential Minimal Optimization (SMO) in the traditional SVM algorithm
  - Provided various kernel functions, including TAHN, TL1, gaussian, polynomial and linear kernels
  - Implemented various vector machine algorithms, including KVM, LSSVM, kPCA

Awards

Academic Excellence Scholarship of Shanghai Jiao Tong University 2015-2016

Extracurricular Activity

- **Debate Team**: Won the first prize in the university debate competition
- **Volunteer**: Organized a bazaar selling study notes to help people with kidney disease

Skills

- **Programming**: Python, C/C++, SQL, Bash, Latex, Matlab
- **Tests**: GRE: V155, Q170, AW3.0 TOEFL: 103 IELTS: 7.5