JIACHENG ZHU

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EDUCATION

M.S. in Machine Learning, *Machine Learning Department* *Dec 2019 - Present*
School of Computer Science, Carnegie Mellon University, PA, USA

Ph.D. Candidate, *Mechanical Engineering* *Sept 2018 - Present*
College of Engineering, Carnegie Mellon University, PA, USA

Minor in Data Science, *Sept 2015 - June 2017*
School of Computer Science, Fudan University, Shanghai, China

B.Eng. in Aerospace design and Engineering, *Sept 2013 - June 2017*
School of Aeronautics and Astronautics, Fudan University, Shanghai, China

CURRENT RESEARCH

Jiacheng Zhu's research target is to develop interpretable machine learning techniques that transport and utilize knowledge across different domains. To achieve this goal, he leverages probabilistic theory, Bayesian inference, and optimal transport. He tackles machine learning problems on heterogeneous real-world datasets in robotics, autonomous driving, and healthcare.

SELECTED PUBLICATIONS & PREPRINTS

1. **Functional Optimal Transport: map estimation and domain adaptation for functional data**, website
   Jiacheng Zhu*, Aritra Guha*, Dat Do*, Mengdi Xu, XuanLong Nguyen, Ding Zhao, Under review
2. **Context-Aware Safe Reinforcement Learning for Non-Stationary Environments**
   Baiming Chen, Zuxin Liu, **Jiacheng Zhu**, Mengdi Xu, Wenhao Ding, Liang Li, Ding Zhao
   The 2021 International Conference on Robotics and Automation (ICRA 2021).
3. **Task-Agnostic Online Reinforcement Learning with an Infinite Mixture of Gaussian Processes**
   Mengdi Xu, Wenhao Ding, **Jiacheng Zhu**, Zuxin Liu, Baiming Chen, Ding Zhao, Conference on Neural Information Processing Systems (NeurIPS 2020) .
4. **Robust Representation Learning for Time Series via Wasserstein Distance**
   Aritra Guha, Rayleigh Lei, **Jiacheng Zhu**, Wenshuo Wang, Ding Zhao, XuanLong Nguyen, IEEE Transactions on Neural Networks and Learning Systems (TNNLS), Under review.
5. **Recurrent Attentive Neural Process for Sequential Data**
   Shenghao Qin*, **Jiacheng Zhu***, Jimmy Qin, Wenshuo Wang, Ding Zhao, Conference on Neural Information Processing Systems (NeurIPS 2019) Workshop.
6. **Probabilistic Trajectory Prediction for Autonomous Vehicles with Recurrent Attentive Neural Process**
   Jiacheng Zhu*, Shenghao Qin*, Wenshuo Wang, Ding Zhao, preprint.
7. **Multi-Vehicle Interaction Scenarios Generation with Interpretable Traffic Primitives and Gaussian Process Regression**
   Weiyang Zhang, Wenshuo Wang, **Jiacheng Zhu**, Ding Zhao, 2020 Intelligent Vehicles Symposium.

8. **A Tempt to Unify Heterogeneous Driving Databases using Traffic Primitives**
Jiacheng Zhu, Wenshuo Wang, Ding Zhao, The 21st IEEE International Conference on Intelligent Transportation Systems (ITSC-2018), Hawaii, USA, November 4-7, 2018

WORK EXPERIENCE

Apple AI/ML May 2021-Oct 2021
Research Intern - Health AI *Seattle, WA*

· Develop machine learning models for real-world healthcare datasets

Isuzu Technical Center of America May 2020-Sep 2020
Research Intern - Decision Making for Autonomous Driving *Ann Arbor, MI*

· Developed a Decision-Making Module based on online trajectory prediction with deep generative models.
· Conduct the domain adaptation from public dataset to testing domain for real-world deployment

Etiger Capital Partners LLC Jun 2017-Aug 2017
Quantitative Analyst - Data Mining & Analysis *Shanghai, China*

· Independently built a Business-News-NLP Arbitrage on China's A-share stock market based on Hidden Markov Model, and Naive Bayes Classifier for identifying profitable opportunities

SELECTED PROFESSIONAL SERVICES

Reviewer ICML 2021, NeurIPS 2021, ICLR 2022, ITSC 2018

TALKS & ACTIVITIES

Oxford Machine Learning Summer School July 2020
Attendee *OxML 2020, Oxford University (Online)*

Recurrent Attentive Neural Process for Sequential Data Dec 2019
Lightning Talks *NeurIPS 2019,Learning with Rich Experience (LIRE) Workshop,Vancouver*

Artificial Intelligence for Data Discovery and Reuse (AIDR) 2019 May 2019
Long Talk *Carnegie Mellon University, Pittsburgh*

HONORS

· Certification, Oxford Machine Learning Summer School, 2020 (Online)
· NeurIPS Student Travel Award, NeurIPS 2019, 2019
· Rackham Travel Grant Fellowship, University of Michigan, Ann Arbor, 2018
· Junyuan Scholarship for Undergraduate Student, Fudan University, 2017
· Outstanding Undergraduate Thesis, Fudan University, 2016
· Xiexin Excellent Student Scholarship, Fudan University, 2016
· Junyuan Scholarship for Undergraduate Student, Fudan University, 2016
· 'GuangHua Innovation Prize' of Fudan University, Fudan University, 2015
· China Graduate Future Flight Vehicle Innovation Competition, First Prize, 2014

SELECTED COURSES

Statistical Machine Learning, Probabilistic Graphical Models, Convex Optimization, Reinforcement Learning, Advanced Deep Learning, Intro to Machine Learning, Computer Vision, Machine Learning with Large Datasets, Mobile Robotics: SLAM, Robot Kinematics & Dynamics, Database Management Systems, Data Structures and Algorithms

TECHNICAL AND PERSONAL SKILLS

Computer Languages	Python, JavaScript, C/C++, MATLAB
Softwares & Tools	TensorFlow, Pytorch, ROS, OpenRAVE, MySQL, OpenCV, CUDA, Solidworks, LaTeX
Languages	English, Mandarin, Shanghai Dialect