

# JIACHENG ZHU

5030 Centre Ave., Apt 361, Pittsburgh, PA 15213

(+1) 734 882 9807 ◊ jzhu4@andrew.cmu.edu ◊ <https://jiachengzhuml.github.io/> ◊ [Github](#)

## EDUCATION

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- 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

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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

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- 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 by JMLR
- 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).
- 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) .
- 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.
- 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.
- Probabilistic Trajectory Prediction for Autonomous Vehicles with Recurrent Attentive Neural Process**  
**Jiacheng Zhu\***, Shenghao Qin\*, Wenshuo Wang, Ding Zhao, preprint.
- 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

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### Apple AI/ML

*Research Intern - Health AI*

May 2021-Oct 2021

*Seattle, WA*

- Develop machine learning models for real-world healthcare datasets

### Isuzu Technical Center of America

*Research Intern - Decision Making for Autonomous Driving*

May 2020-Sep 2020

*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

*Quantitative Analyst - Data Mining & Analysis*

Jun 2017-Aug 2017

*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

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### Reviewer

ICML 2021, NeurIPS 2021, ICLR 2022, ITSC 2018

## TALKS & ACTIVITIES

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### Oxford Machine Learning Summer School

*Attendee*

July 2020

*OxML 2020, Oxford University (Online)*

### Recurrent Attentive Neural Process for Sequential Data

*Lightning Talks*

*NeurIPS 2019, Learning with Rich Experience (LIRE) Workshop, Vancouver*

Dec 2019

### Artificial Intelligence for Data Discovery and Reuse (AIDR) 2019

*Long Talk*

May 2019

*Carnegie Mellon University, Pittsburgh*

## HONORS

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- 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

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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

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<b>Computer Languages</b>	Python, JavaScript, C/C++, MATLAB
<b>Softwares &amp; Tools</b>	TensorFlow, Pytorch, ROS, OpenRAVE, MySQL, OpenCV, CUDA, Solidworks, L <sup>A</sup> T <sub>E</sub> X
<b>Languages</b>	English, Mandarin, Shanghai Dialect