

ZIZHAO WANG

zizhao.wang@utexas.edu \diamond <https://wangzizhao.github.io>

EDUCATION

University of Texas at Austin PhD in Electrical and Computer Engineering	<i>Sept. 2020 - TBD</i>
Columbia University MS in Computer Science, GPA: 4.00/4.00	<i>Sept. 2018 - Dec. 2019</i>
University of Michigan - Ann Arbor BS in Computer Engineering, GPA: 3.96/4.00	<i>Sept. 2016 - Apr. 2018</i>
Shanghai Jiao Tong University BS in Electrical and Computer Engineering, Major GPA: 3.72/4.00	<i>Sept. 2014 - Aug. 2018</i>

PUBLICATIONS

Zizhao Wang*, Junyao Shi*, Iretiayo Akinola*, and Peter Allen. Maximizing BCI Human Feedback using Active Learning. *In IROS 2020*.

Iretiayo Akinola*, **Zizhao Wang***, Junyao Shi, Xiaomin He, Pawan Lapborisuth, Jingxi Xu, David Watkins-Valls, Paul Sajda, and Peter Allen. Accelerated Robot Learning via Human Brain Signals. *In ICRA 2020*.

Antonio Khalil Moretti*, **Zizhao Wang***, Luhuan Wu*, Iddo Drori, Itsik Pe'er. Particle Smoothing Variational Objectives. *In ECAI 2020*.

Antonio Khalil Moretti*, **Zizhao Wang***, Luhuan Wu, Itsik Pe'er. Smoothing Nonlinear Variational Objectives with Sequential Monte Carlo. *In ICLR 2019 Workshop*.

RESEARCH AND PROJECTS

Accelerate Reinforcement Learning (RL) via Human Feedback *Feb. 2019 - Now*
Research Assistant, Columbia University *New York, NY*

- Designed a framework to speed up RL in sparse reward environments by augmenting RL with an policy learned from human feedback.
- Incorporated Active Learning to improve sample efficiency and robustness against feedback noise.
- Experimented on robot navigation tasks with real human subjects, achieving performance comparable to RL agents learning from human-designed rich rewards.
- Accepted in ICRA 2020: arxiv and IROS 2020.

Variational Inference in Time Series *Sept. 2018 - Now*
Research Assistant, Columbia University *New York, NY*

- Designed a variational objective based on particle smoothing, and the objective can learn the dynamic system and infer hidden states only based on observations.
- Enabled prediction for various nonlinear chaotic system and reduced the prediction error by 60% than previous methods.
- Accepted in ICLR 2019 workshop: openreview. Full paper accepted in ECAI 2020: arxiv.

Data-driven Estimated Time of Arrival *May. 2018 - Aug. 2018*
Senior Project, Shanghai Jiao Tong University *Shanghai, China*

- Predicted travel time for taxis drivers, achieving prediction error $< 10\%$.
- Matched trajectory GPS with road map using the hidden Markov model and managed data with PostgreSQL database.
- Applied convolutional neural networks to capture the spatial-temporal relationship in the traffic conditions.

Reinforcement Learning Verification Challenge

Oct. 2017 - Dec. 2017

University of Michigan

Ann Arbor, MI

- Reproduced and verified the paper "Jointly Learning to Construct and Control Agents Using Deep Reinforcement Learning" in ICLR 2018 Verification Challenge.
- Implemented parameter-exploring policy gradient and proximal policy optimization, to jointly optimize the physical design and control policy of the robot.

HONORS AND AWARDS

Jackson and Muriel Lums Scholarship (top 5%)

July. 2016

Mathematical Contest in Modelling - Meritorious Winner (top 10%)

Jan. 2016

Kehui Scholarship (top 2%)

Sept. 2014

SKILLS

Languages Python (TensorFlow), C, C++, PostgreSQL, MatLab