ERIC ZHAN

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EDUCATION

California Institute of Technology 2016 - 2021 (expected)
Ph.D. Candidate, Computing & Mathematical Sciences
GPA: 3.8

Cornell University 2012 - 2016
B.A. Computer Science and Mathematics, *summa cum laude*
GPA: 4.0

RESEARCH EXPERIENCE

Machine Learning Researcher at Caltech (Advisor: Yisong Yue) 2016 - Present

- Research in generative behavior modeling and sequential decision making, focusing on developing new methods for imitation learning inspired by generative models, weak supervision, and program learning.
- Published research at top conferences for machine learning (ICML, ICLR, NeurIPS).
- Proposed thesis topic: Generative Behavior Modeling with Programmatic Structure.

Research Intern at Argo AI (Tracking & Prediction) Summer 2020

- Designed models and learning objectives to learn compact representations of complex traffic scenes.
- Leveraged learned representations to enable efficient search and retrieval of relevant traffic scenes.
- Developing new tool for scene retrieval, improving dataset quality and model evaluation (in progress).

Research Intern at Microsoft Research (Reinforcement Learning) Summer 2018

- Investigated methods for calibrating agents to specific playstyles for playing Atari games via RL & IL.
- Implemented and benchmarked various state-of-the-art RL & IL algorithms in Project Athens codebase.
- Published research at ICML 2020: Learning Calibratable Policies using Programmatic Style-Consistency.

SOFTWARE ENGINEERING EXPERIENCE

SWE Intern at LinkedIn (Messaging) Summer 2015

- Engaged in product decisions to improve the social connections that users can build through LinkedIn.
- Implemented new messaging features for LinkedIn's desktop and mobile web applications.

SWE Intern at Yahoo (Fantasy Sports) Summer 2014

- Created a database of user data to study user behavior and factors that affect user retention rate.

KEY SKILLS

Machine Learning Research

- Proficient in: Python, PyTorch, LaTeX, GitHub, deep learning, model testing and evaluation.
- Experience with: TensorFlow, Keras, Jupyter, Java, GPU computing, cloud computing.

Relevant Coursework

- **Computer Science**: Advanced Topics in Machine Learning, Data Mining, Computer Vision, Networks, Analysis of Algorithms, Data Structures, Functional Programming, Operating Systems, Cryptography.
- **Mathematics**: Probability & Statistics, Information Theory, Optimization, Linear Analysis.

PUBLICATIONS

Jennifer Sun, Ann Kennedy, **Eric Zhan**, Yisong Yue, Pietro Perona. Task Programming: Learning Data Efficient Behavior Representations. *NeurIPS 2021*.

Ameesh Shah*, **Eric Zhan***, Jennifer Sun, Abhinav Verma, Yisong Yue, Swarat Chaudhuri. Learning Differentiable Programs with Admissible Neural Heuristics. *NeurIPS 2020*.

Eric Zhan, Albert Tseng, Yisong Yue, Adith Swaminathan, Matthew Hausknecht. Learning Calibratable Policies using Programmatic Style-Consistency. *ICML 2020*.

Yukai Liu, Rose Yu, Stephan Zheng, **Eric Zhan**, Yisong Yue. NAOMI: Non-Autoregressive Multiresolution Sequence Imputation. *NeurIPS 2019*.

Eric Zhan, Stephan Zheng, Yisong Yue, Long Sha, Patrick Lucey. Generating Multi-Agent Trajectories using Programmatic Weak Supervision. *ICLR 2019*.

Oliver Stephenson, Tobias Koehne, **Eric Zhan**, Brent Cahill, Zachary Ross, Mark Simons, Sang-Ho Yun. Deep Learning-based Damage Mapping with InSAR Coherence Time Series. *AGU Fall Meeting 2019*.

Eric Zhan, Stephan Zheng, Yisong Yue. MAGnet: Generating Long-Term Multi-Agent Trajectories. *Bayesian Deep Learning workshop, NeurIPS 2017*.

*equal contribution

ACADEMIC EXPERIENCE

Teaching 2016 - Present

- Caltech Research Mentor: CS101 Projects in Machine Learning.
- Caltech Teaching Assistant: CS159 Advanced Topics in Machine Learning.
- Cornell Teaching Assistant: CS4820 Algorithms, CS4850 Math Foundations for the Information Age.

Conference Reviewing

- NeurIPS 2020, ICLR 2021, CVPR 2021.

HONORS & AWARDS

Cornell Computer Science Honors Program *summa cum laude*. 2016
Cornell Pauline and Irving Tanner Dean Scholar. 2012
Honorable Mention at 42nd International Physics Olympiad. 2011