Zhixun "Jason" He

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SKILLS

- Python (proficient) ·C/C++ · Java · Swift · Docker · Kubernetes · AWS · SQL · Algorithm Design · MATLAB · Arduino
- Tensorflow · Keras · PyTorch · Computer Vision (CV) · Natural Language Processing (NLP) · Reinforcement Learning (RL) · Transfer Learning · Model Fine-tuning · Distillation · Object Detection · Quantitative Analysis · Prototyping · Modeling

EDUCATION

Ph.D. (5/2024) Electronic Engineering & Computer Science (GPA: 3.8/4.0) **University of California, Merced** **Merced, CA**

B.E. (6/2013) Composite Material Science & Engineering (GPA: 3.8/4.0) **Nanjing Tech University** **Nanjing, China**

WORK EXPERIENCE

University of California, Merced **Merced, CA**

Research Assistant | School of Engineering *August 2020 - Jan 2024*

- Conducted research in defending against adversarial attacks on deep learning models. Developed and prototyped 50+ novel models (Python), designed experiments, and evaluated results, outperforming state-of-the-art methods by 32%.
- Collaborated closely with faculty, contributing to 4 publications in peer-reviewed conferences. Mentored first-year graduate students in academic progress and mental health, and mentored undergraduates in research methodologies.

University of California, Merced **Merced, CA**

Teaching Assistant | School of Engineering *August 2016 - Dec 2023*

- Collaborated closely with faculties to develop course materials and coding exercises, with a commitment to student learning and success. Led weekly lab for 200+ students in Object-Oriented Programming in C++, Python, and Java.
- Provided visual aids to explain complex concept with clarity. Increased student engagement by 10% with personalized assistance and interpersonal skills. Enhanced student retention rate to 94% and teaching effectiveness rate to 93.5%.

Digital Media Academy **Stanford, CA**

Instructor | Artificial Intelligence(AI), Machine Learning(ML) and Data Science *June 2019 - Aug, 2019*

- Developed 20 advanced ML projects (Python) that cover computer vision, NLP, RL, and video/image processing.
- Managed teaching team and delivered courses to 150+ students, receiving a satisfaction rate of 96% in the survey.

CONFERENCE & PUBLICATIONS

Z. He, M. Singhal, "**VQUNet: Vector Quantization U-Net for Defending Adversarial Attacks by Regularizing Unwanted Noise**", 7th *International Conference on Machine Vision and Applications (**ICMVA**), Mar. 2024.*

Z. He, M. Singhal, "**Defense-CycleGAN: A Defense Mechanism Against Adversarial Attacks Using CycleGAN to Reconstruct Clean Images**", *3rd International Conference on Pattern Recognition and Machine Learning*, Jul. 2022.

Z. He, M. Singhal, "**Adversarial Defense Through High-Frequency Loss Variational Autoencoder Decoder and Bayesian Update With Collective Voting**", *17th International Conference on Machine Vision Applications*, Jun. 2021.

C. Basu, E. Biyik, **Z. He**, M. Singhal, and D. Sadigh, "**Active Learning of Reward Dynamics from Hierarchical Queries**", *Proceedings of the IEEE International Conference on Intelligent Robots and Systems (**IROS**)*, Nov. 2019.

AWARD/FELLOWSHIP

Bob Cat Fellowship−6 times of scholarship for summer research from the EECS department. *2017 - 2023*

Distinguished Fellowship−6 times of scholarship from NTU for outstanding academic performance. *2009 - 2013*