

Yuanzhao Zhang

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Research Engineer with MPhil degree from Cambridge, working experience across different industries. Strong background in Machine Learning and Software Engineering. Proven research skills developed in laboratory and industrial settings.

Education

- **University of Cambridge** Cambridge, UK
MPhil in Machine Learning, Speech and Language Technology Oct. 2017 – Nov. 2018
- **Hong Kong University of Science and Technology** Hong Kong
BEng in Computer Engineering (First Class Honors) Sep. 2013 – Jun. 2017

Professional Experience

- **Samsung AI Center** Cambridge, UK
Research Engineer Jul. 2020 - Present
 - Developing multi-modal vision-language models, such as Visual Question Answering systems.
 - Developed custom end-to-end dialogue models for AI assistant.
 - Assisted team members on daily tasks including but not limited to: building data pipelines for model training, running baseline experiments for paper submission, etc.
- **Babylon Health** London, UK
Research Engineer Jan. 2019 - Jun. 2020
 - Developed framework of using NLP models to predict global health statistics(disease incidence, prevalence, etc).
 - Worked on automatic medical triage using Deep Reinforcement Learning.
 - Integrated human eye gaze estimation framework into medical vision pipeline.
- **BMLL Technologies** London, UK
Machine Learning Intern Oct. 2018 - Dec. 2018
 - Worked on optimized trade execution using Online Learning and Reinforcement Learning methods.
- **Cisco Systems(China) Research & Development Co. Ltd** Shanghai, China
Intern Jun. 2016 - Sep. 2016
 - Designed and implemented the prototype of “Intelligent Equipment Leverage System”.
 - Developed software tool to improve bill of materials processing efficiency.
- **HKUST Robotics Team Robocon Sub-team** Hong Kong
Hardware Engineer Dec. 2013 - Jun. 2014
 - Designed motor controller and linear CCD module, set up hardware for communication system.

Publication & Research

C. Shen, Y. Zhang, Z. Li, F. Gao, and S. Shen. Collaborative air-ground target searching in complex environments. In *2017 IEEE International Symposium on Safety, Security and Rescue Robotics (SSRR)*, pages 230–237, Oct 2017 <http://ieeexplore.ieee.org/document/8088168/>

Albert Buchard, Baptiste Bouvier, Giulia Prando, Rory Beard, Michail Livieratos, Dan Busbridge, Daniel Thompson, Jonathan Richens, Yuanzhao Zhang, Adam Baker, et al. Learning medical triage from clinicians using deep q-learning. *arXiv preprint arXiv:2003.12828*, 2020 <https://arxiv.org/abs/2003.12828>

Yuanzhao Zhang, Robert Walecki, Joanne R Winter, Felix JS Bragman, Sara Lourenco, Christopher Hart, Adam Baker, Yura Perov, and Saurabh Johri. Applying artificial intelligence methods for the estimation of disease incidence: The utility of language models. *Frontiers in digital health*, page 31, 2020 <https://www.frontiersin.org/articles/10.3389/fdgth.2020.569261/full>

Yuanzhao Zhang and Yichuan Zhang. Manifold hamiltonian dynamics for variational auto-encoders https://www.mlmi.eng.cam.ac.uk/files/thesis_yuanzhao_zhang.pdf

HomeFit2K: A Fine-grained Video Dataset for Understanding Exercise Steps, Common Errors, and Physical States in Home Fitness Videos (ECCV 2022 under review)

Projects

- **Manifold Hamiltonian Dynamics for Variational Auto-Encoders** Cambridge, UK
Researcher Mar. 2018 - Aug. 2018
 - Researched an algorithm to improve VAEs by approximating the intractable posteriors using MHMC.
- **Collaborative Air-Ground Target Searching in Complex Environments** Hong Kong
Researcher Sep. 2016 - Aug. 2017
 - Researched vision-based target detection algorithm and autonomous trajectory generation.
 - Developed sensor fusion algorithm using extended Kalman filter.
- **Securities Portfolio Management System** Hong Kong
Software Developer Jun. 2016 - Sep. 2016
 - Constructed web-based securities portfolio management system under .NET framework.
- **Search & Rescue robot, Embedded System Project** Hong Kong
Team Member Feb. 2016 - Jun. 2016
 - Built a search & rescue robot based on STM32 microcontroller.
 - Implemented 2-D map generation and active detection of nearby human being.
- **Undergraduate Research Opportunities Program** Hong Kong
Researcher Sep. 2014 - Jun. 2015
 - Aerial Smart-Phone Acrobat: Created the communication system for a smartphone-powered UAV.
 - Nano-Transistor Modeling for Circuit Simulation: Examined the aging effect of transistors.

Technical Skills

- Proficient in Python, C/C++, C, Java, VBA, Matlab; experience in HTML, Android app development
- Proficient in deep learning, Bayesian inference
- Proficient in PyTorch, TensorFlow, Keras, HTK and various machine learning toolkits
- Experience in robotic system development under ROS, Altium Designer and PCB board design
- Experience in database management, SQL, Docker, Git, Azure and web development under .NET

Awards

- Scholarship Scheme for Continuing Undergraduate Students
- Deans List for 5 consecutive semesters
- HKSAR Government Scholarship Fund - Talent Development Scholarship
- Champion of 2014 ABU Asia-Pacific Robot Contest, Hong Kong regional contest

Activities

- Won silver medal in Kumite junior group at 2015 Karate Hong Kong Joint University Tournament.
- Selected as volunteer for event preparations at TEDxHKUST.
- Selected as tutor for HKUST Robotics Team new member training.
- Elected as Internal Secretary of HKUST Karate Club, handled intra-society affairs.