Hehui Zheng

Doctoral Fellow, ETH AI Center

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EDUCATION

2021-now	**ETH AI Center** **Doctoral Fellow** Supervisors: Prof. Stelian Coros, Prof. Robert Katzschmann, and Prof. Otmar Hilliges
2017-2021	**Selwyn College, University of Cambridge** **Bachelor of Arts and Master of Engineering** in Information and Computer Engineering Year-1 Class: First Class (Top 2%) Year-2 Class: First Class (Top 2%) Year-3: Pass (unclassed due to COVID-19 crisis) Master: Honours pass with merit
2016-2017	**The University of Hong Kong** Studying for Bachelor of Engineering (Computer Science) **Cumulated GPA: 4.18/4.3 (First Honors Top)**

PROGRAMMING LANGUAGES & RELEVANT SKILLS

Python   C++   MATLAB   SQL   R   Latex

RESEARCH EXPERIENCE

Prorok Lab, Computer Laboratory, University of Cambridge   Cambridge, UK

June 2020 – Sept. 2020	**Summer Research Assistant** Conducted literature review on Multi-agent RL algorithms, collaborated on building an OpenAI Gym Environment based on PyBullet, and worked on flocking experiments with this simulator. **Second author** of the paper *Learning to Fly – a Gym Environment with PyBullet Physics for Reinforcement Learning of Multi-agent Quadcopter Control*, accepted at **IROS 2021**. Paper link: https://arxiv.org/abs/2103.02142 GitHub link: https://github.com/JacopoPan/gym-pybullet-drones
June 2019 – Sept. 2019	**Undergraduate Research Opportunity Programme** Conducted literature review on existing flocking and privacy solutions, introduced the problem of private flocking, developed a data-driven adversarial co-optimization algorithm, designed, implemented, and carried out relevant experiments. **First author** of the paper *An Adversarial Approach to Private Flocking in Mobile Robot Teams*, accepted at **RA-L / ICRA 2020**. Paper link: https://ieeexplore.ieee.org/abstract/document/8962220 GitHub link: https://github.com/proroklab/private_flocking

SenseTime   Shenzhen, China

June 2018 - Dec. 2019	**Intern Researcher** Conducted literature review on existing Neural Architecture Search (NAS) solutions, reformulated the problem, employed Gumbel random variables to directly optimize the NAS objective, added resource-constrained regularization to achieve economical neural architecture, designed and carried out relevant experiments. **Second author** of the paper *SNAS: Stochastic Neural Architecture Search*, accepted at **ICLR 2019** (Seventh International Conference on Learning Representations). arXiv link: https://arxiv.org/abs/1812.09926 **Third author** of the paper *DSNAS: Direct Neural Architecture Search without Parameter Retraining*, accepted at **CVPR 2020**. arXiv link: https://arxiv.org/abs/2002.09128v2 GitHub link: https://github.com/SNAS-Series/SNAS-Series

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List of Publications

Journal Articles
Hehui Zheng, Jacopo Panerati, Giovanni Beltrame, Amanda Prorok. "An Adversarial Approach to Private Flocking in Mobile Robot Teams," *IEEE Robotics and Automation Letters 5 (2), 1009-1016.* 2020.
Paper link: https://ieeexplore.ieee.org/abstract/document/8962220
GitHub link: https://github.com/proroklab/private_flocking

Conference Proceedings
Jacopo Panerati, **Hehui Zheng**, Siqi Zhou, James Xu, Amanda Prorok, Angela P Schoellig. "Learning to Fly – a Gym Environment with Pybullet Physics for Reinforcement Learning of Multi-agent Quadcopter Control," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).* 2021.
Paper link: https://arxiv.org/abs/2103.02142
GitHub link: https://github.com/JacopoPan/gym-pybullet-drones

Shoukang Hu, Sirui Xie, **Hehui Zheng**, Chunxiao Liu, Jianping Shi, Xunying Liu, Dahua Lin. "DSNAS: Direct Neural Architecture Search without Parameter Retraining," *IEEE Conference on Computer Vision and Pattern Recognition (CVPR).* 2020.
arXiv link: https://arxiv.org/abs/2002.09128v2
GitHub link: https://github.com/SNAS-Series/SNAS-Series

Sirui Xie, **Hehui Zheng**, Chunxiao Liu, Liang Lin. "SNAS: stochastic neural architecture search," *International Conference on Learning Representations (ICLR).* 2019.
arXiv link: https://arxiv.org/abs/1812.09926