

Yangzheng(Aaron) Wu

Team Lead, Embodied AI Senior Researcher, PHD

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Professional Experience

Team Lead, Embodied AI Senior Researcher, Huawei Canada Research Institution, Jan 2025 -

- Neurips 2025 Behavior 1K Challenge ranked No. 4 worldwide, with extreme long horizon tasks and competitive teams.
- Led research in E-AI, developing methods leveraging diffusion-based Vision-Language-Action (VLA) models to enable generative intelligent agent behavior in real-world and simulated environments.
- Collaborated with interdisciplinary teams to advance the state-of-the-art in Embodied AI, combining insights from computer vision, natural language processing, and reinforcement learning.
- Proposed and validated new architectures for VLA-based Embodied AI systems, achieving improvements in task completion rates across diverse environments.

Augmented Reality Software Developer, ARxAI Inc., Oct 2018 – Jan 2020

- Ball and Cue Detection Algorithms based on OpenCV
- FFMpeg based mini video player rendered using OpenGL
- Blackfly and Daheng Camera API
- Homographies of Pool table, Camera, and Projector

Robotics Intern, Jabil Circuit (Wuxi, China) Co.,Ltd., May 2017 - Aug 2017

- Nozzle QR Code Scanner Algorithm of NXT Machine
- C# Code Debug for NXT Nozzle Management and Cleaning Machine

Statistics Analysis Intern, L'Oreal China Research and Innovation Center, June 2016 – Aug 2016

- Statistical Analysis using common regression models, neural networks, and decision trees in SPSS and R

Education

PhD, Queen's University, Kingston, ON, Jan 2022 - Jan 2025

- Major: Electrical and Computer Engineering, GPA: 3.98/4.3

- Supervisor: Dr. Michael Greenspan
- Field: Computer Vision, Machine Learning, 6DoF pose estimation, Domain Adaptation
- Thesis: Advancing 6DoF Object Pose Estimation: Keypoint Voting, Optimal Keypoint Sampling, and Bridging the Simulation-to-Real Gap

MASc, *Queen's University, Kingston, ON, May 2021 - Apr 2022*

- Major: Electrical and Computer Engineering, GPA: 3.98/4.3
- Supervisor: Dr. Michael Greenspan
- Field: Computer Vision, Machine Learning, 6DoF pose estimation
- Thesis: Radial Voting Based Keypoint and 6DoF Pose Estimation

MEng, *Queen's University, Kingston, ON, Sept 2017 – Oct. 2018*

- Major: Electrical and Computer Engineering, GPA: 3.7/4.3
- Advisor: Dr. Michael Greenspan
- Report: Detection, Identification, and Tracking of Ball and Cue Stick in ARPool

Robotics Summer School, *Imperial College London, July 2015 – Aug 2015*

- Develop a tennis ball collection robot based on Lego NXT guided by vision algorithms

BS, *Nanjing Forestry University, Nanjing, China, Sept 2014 - June. 2017*

- Major: Electrical Engineering and Automation
- Undergrad research advisor: Dr. Chunhua Hu
- Thesis: Identification of water shortage in poplar saplings based on SVM

Publication

Wu, Yangzheng, et al. "Vote from the center: 6 dof pose estimation in rgb-d images by radial keypoint voting." European Conference on Computer Vision. Cham: Springer Nature Switzerland, 2022.

Wu, Yangzheng, et al. "Keypoint cascade voting for point cloud based 6DoF pose estimation." 2022 International Conference on 3D Vision (3DV). IEEE, 2022.

Wu, Yangzheng and Greenspan, Michael. "Learning Better Keypoints for Multi-Object 6DoF Pose Estimation." Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision. 2024.

Wu, Yangzheng and Greenspan, Michael. "Pseudo-keypoints RKHS Learning for Self-supervised 6DoF Pose Estimation." European Conference on Computer Vision. Cham: Springer Nature Switzerland, 2024.\

Patent

Greenspan Michael, Mohsen Zand, Seyed Ali Etemad, and **Yangzheng Wu**. "Systems and methods for pose estimation via radial voting based keypoint localization." US12417552B2.

Yangzheng Wu et al. “Method and System For Controlling Robot”. U.S. Patent Application No. US18/131,060.

Awards & Distinctions

- **Technical Lead, The NorthStar Team — 4th Place Worldwide**, NeurIPS 2025 BEHAVIOR-1K Challenge (Stanford University & NVIDIA). Led team strategy and core system design.
- **Main Contributor, Best-Performing Method on ITODD**, BOP 2022 6DoF Rigid Object Pose Estimation Challenge (Meta & Niantic).
- **Fully Funded MASc and PhD Scholarships**, awarded by NSERC (Canada).

Professional Skills

VLA, IsaacSim, Maniskill, Curobo, Git, Python, Pytorch, Docker, Scikit-learn, CUDA C, C++, OpenCV, Open3D, OpenGL, FFMPEG