Minjune Hwang

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Education

Sep '21 – Jun '23 | **Stanford University**
M.S. in Computer Science

Aug '17 – May '21 | **University of California, Berkeley**
B.A. in Computer Science, B.A. in Statistics GPA: 3.90 / 4.0 (CS GPA: 3.98)

Work Experience

Sep '22 - Present | **Amazon Robotics** - *Applied Scientist Intern*
- Developing a novel task-specific object & motion detection algorithm and ML training pipelines.

Mar '22 - Present | **Stanford Vision Lab** - *Research Assistant*
- Researching shared autonomy for mobile manipulation in household tasks with Prof. Fei-Fei Li.
- Developed robot navigation & manipulation tools in simulation software for embodied AI.

June '22 - Sep '22 | **Microsoft** - *Research Intern*
- Designed an RL algorithm for offline domain transfer via reward augmentation & residual learning.

May '21 - Aug '21 | **Apple, SPG** - *Software Engineering Intern, Motion & Trajectory Planning*
- Developed efficient sampling algorithms for generating kinematically feasible trajectories.
- Implemented abstraction layer for serializing/deserializing data required for trajectory optimization.

Feb '19 - May '21 | **Berkeley AI Research** - *Research Assistant*
- Created a large-scale trajectory dataset for vehicle behavior learning with Prof. Alexandre Bayen.
  - Applied Faster R-CNN for detecting vehicles in traffic and Kalman filter for object tracking.
  - Leveraged trajectories for learning under-structured traffic with Model Predictive Control.
- Researched extractive text summarization with topic-models & RNNs with Prof. Laurent El Ghaoui.
- Developed a sparsity-invariant ResNet model for adversarial patch attack detection via occlusion.

Honors

2021 | **High Distinction (Magna Cum Laude) in General Scholarship, UC Berkeley**

2020 | **Best Workshop Paper Award @ Conference of Applied Cryptography and Network Security 2020**

2020 | **Berkeley Summer Undergraduate Research Fellowships**

Selected Publications

2022
1. Li, C. *et al.* BEHAVIOR-1K: A Benchmark for Embodied AI with 1,000 Everyday Activities and Realistic Simulation. *CoRL,* 2022. **(Nominated for Best Paper Award).**
2. Wu, F., Wang, D., **Hwang, M.**, Hao, C., Lu, J., Zhang, J., Chou, C., Darrell, T. & Bayen, A. Decentralized Vehicle Coordination: The Berkeley DeepDrive Drone Dataset. *In submission to IJRR,* 2022.

2020
3. McCoyd, M., Park, W., Chen, S., Shah, N., Roggenkemper, R., **Hwang, M.**, Liu, J. X. & Wagner, D. Minority Reports Defense: Defending Against Adversarial Patches. *Security in Machine Learning and its Applications (SiMLA),* 2020. **(Best Workshop Paper Award).**
4. Tsai, A., Günay, S., **Hwang, M.**, Li, C., Zhai, P., El Ghaoui, L. & M.Mosalam, K. Text Analytics for Resilience-Enabled Extreme Events Reconnaissance. *AI+HADR Workshop @ NeurIPS,* 2020.
5. Wu, F., Wang, D., **Hwang, M.**, Hao, C., Lu, J., Darrell, T. & Bayen, A. Motion Planning in Under-structured Road Environments with Stacked Reservation Grids. *Perception, Action, Learning (PAL) @ ICRA,* 2020.

Skills

- **Programming Languages**: Python, SQL, C++, Java, Javascript, HTML/CSS, R, C
- **ML**: Vision (segmentation, tracking, diffusion, etc), NLP (RNNs, Transformers), Multitask & Meta Learning
- **Robotics**: ROS, RL (DDPG, SAC, CQL, etc), Optimal Control (LQR/LQG, MPC), Inverse RL, Planning (A*, RRT*, etc)
  - Libraries: PyTorch, Tensorflow, OpenCV, ROS, Ray, RLlib, PyData Stack, cvxopt, SageMaker, Detectron2, NetworkX