Minjune Hwang

https://mj-hwang.github.io | mjhwang@berkeley.edu | San Francisco Bay Area

Education

University of California, Berkeley — Aug '17 - May '21
B.A. in Computer Science, B.A. in Statistics — GPA: 3.90/4.0 (CS GPA: 3.98)
Awards: Berkeley Summer Undergraduate Research Fellowships (SURF), The Berkeley Undergraduate Scholarship
Best Workshop Paper Award @ Conference of Applied Cryptography and Network Security (ACNS) 2020

Research & Work Experience

Berkeley AI Research – Undergraduate Researcher — Feb '19 - Present
- Worked with Prof. Alexandre Bayen on creating vehicle trajectory datasets with object detection and tracking.
  - Applied Faster R-CNN for detecting vehicles/pedestrians in top-view traffic and Kalman filter for object tracking.
  - Leveraged vehicle trajectories for training an agent in traffic environments with MPC controllers and RL models.
- Worked with Prof. Laurent El Ghaoui on extractive summarization and text classification with topic-models & RNNs.
  - Created topic coverage heuristics and redundancy reduction methods in summaries with unsupervised clustering.

Lawrence Berkeley National Laboratory – Research Apprentice — Aug '19 - Present
- Worked with Prof. Kevin Bender on neural biophysical parameters with gradient-based & nonconvex optimization.

Berkeley EECS Department – Undergraduate Researcher — Aug - Dec '19
- Worked with Prof. David Wagner on identifying adversarial attacks on deep learning image classification.
  - Developed a sparsity-invariant version of ResNet to detect adversarial patch attacks by occluding a part of images.

Sumup Analytics – AI Research Intern — Apr - Aug '19
- Developed sparse text classifiers and extractive text summarizer tool using sparse Naïve Bayes and topic-modeling.
- Leveraged above models for sentiment analysis on corporate financial documents & abusive post detection on Twitter.
- Programmed a topic-based novelty detection code for alerting novel articles on arXiv, an archive for scholarly articles.

PwC Consulting – Software Engineering Intern — June - July '18
- Developed an ANN model that parses international trade documents and categorizes into customs/trading terms.

Teaching Experience

EECS Department of UC Berkeley – Reader (EE 227BT: Convex Optimization) — Aug '19 - Dec '19
Ecole Bilingue de Berkeley – Robotics Instructor (under Prof. Alexandre Bayen) — Jan '19 - May '19
- Volunteered to design a semester-long curriculum for robotics (robot designing / programming) and teach students.

EECS Department of UC Berkeley – Lab Assistant (CS 61A) — Jan '18 - May '18

Papers

Alicia Tsai*, Selim Günay*, **Minjune Hwang***, Chenglong Li*, Pengyuan Zhai*, Laurent El Ghaoui, Khalid M. Mosalam. *Text Analytics for Resilience-Enabled Extreme Events Reconnaissance.* AI+HADR Workshop @ NeurIPS 2020. [arXiv]

Fangyu Wu, Dequan Wang, **Minjune Hwang**, Chenhui Hao, Jiawei Lu, Trevor Darrell, Alexandre Bayen. *Motion Planning in Understructured Road Environments with Stacked Reservation Grids.* PAL Workshop @ ICRA 2020. [paper]

Khalid M. Mosalam, Selim Günay, Alicia Y. Tsai, **Minjune Hwang**, Laurent El Ghaoui. *Building Resilience Through Structural Health Monitoring and Reconnaissance.* World Conference on Earthquake Engineering (WCEE) 2020. [paper]

Michael McCoyd, Won Park, Steven Chen, Neil Shah, Ryan Roggenkemper, **Minjune Hwang**, Jason Xinyu Liu, David Wagner. *Minority Reports Defense: Defending Against Adversarial Patches.* Security in Machine Learning and its Applications (SiMLA) 2020. [arXiv / paper]
*: equal contribution

Presentation

Summer Undergraduate Research Fellowships (SURF) Conference
- "Object Tracking for Vehicle Trajectories in Under-regulated Traffic and their applications" — Aug '20