Minjune Hwang

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Education

University of California, Berkeley Aug '17 - Dec '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

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 curriculum for robotics (robot designing / programming) and teach elementary school 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. [paper]

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