# 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](https://mj-hwang.github.io/data/20pal.pdf)]

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](https://mj-hwang.github.io/data/20pal.pdf)]

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](https://mj-hwang.github.io/data/17WCEE.pdf)]

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](https://arxiv.org/abs/2004.13799) / [paper](https://mj-hwang.github.io/data/2004.13799.pdf)]

\*: equal contribution

# Presentation

**Summer Undergraduate Research Fellowships (SURF) Conference**

* Object Tracking for Vehicle Trajectories in Under-regulated Traffic and their applications Aug ‘20