

# Matthew Tang

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matthew29tang.github.io



## Education

### University of California, Berkeley

2018 – 2022

B.S. Electrical Engineering and Computer Science (EECS) | GPA 3.93

Regents' and Chancellor's Scholar (top 2%), Edward E. Kraft Award (Freshman 4.0 GPA)

**Organizations:** Eta Kappa Nu Honors Society, Regents/Chancellor's Scholars Assoc

### Relevant Coursework (\* Fall 2020)

[CS170] Efficient Algorithms

[CS61B] Data Structures & Algorithms

[EECS126] Probability & Random Processes

[CS188] Artificial Intelligence

[CS160] UI Design & Development\*

[IEOR 135] Data Sci for Venture Applications

[CS186] Database Systems

[CS61C] Computer Architecture\*

[EECS127] Optimization Models\*

## Experience

### Software Engineer Intern | Capital One, San Francisco, CA

2020

- Developed a processor (PySpark) to intelligently identify datasets in AWS S3 (>1B files)
- Designed a novel algorithm using cosine similarity clustering & heuristics (1.6x improvement)

### Fullstack Engineer | Computational Approaches to Human Learning Lab

2020 – Present

- Develop an Intelligent Tutoring System with Bayesian Knowledge Tracing (ReactJS, Firebase)
- System to be deployed for 100+ inmates under HopeAI (prison inmate education system)

### Academic Intern | Data Structures (UC Berkeley CS61B)

2020

- Assist 20+ students in lab section (one-on-one) with software development projects

### Summer Undergraduate Researcher | USC Viterbi Interaction Lab

2019

- Developed a novel model & action selector for estimation of human beliefs and robotic actions to correct them using reinforcement learning for dynamic environments with uncertainty.

## Projects

### FuSSI-Net – Volvo Cars / Data-X

2020

- A novel pedestrian intent prediction network using early fusion of skeletal fitting to a framework of object detection (YOLO), association (SORT), and classification (DenseNet)
- Back-end: Python (TensorFlow), Team size: Six (UC Berkeley) & Six (Chalmers, Sweden)

### LangID

2019

- Recurrent neural network (RNN) to classify the language of a word
- Back-end: Python (CS188 machine learning modules), Team size: One

### Universal Subtitler – Cal Hacks (Best Use of Google Cloud API 3<sup>rd</sup> out of 110 teams)

2019

- Generate subtitles in any language for videos using Google Speech to Text & Translate API
- Back-end: JavaScript, Frontend: JavaScript (Chrome Extension), Team size: Four

### ShareFund – LA Hacks

2019

- Democratic hedge fund web app using algorithmic trading and machine learning
- Back-end: JavaScript & Python, Frontend: React, Team size: Three

## Leadership

### Technology Director | Health{hacks}

2020 – Present

- Hosted a virtual healthcare innovation event to solve global health problems (250+ attendees)

### Executive Director | Golden Gate Science Olympiad

2018 – Present

- Lead 15-member board in weekly meetings to obtain sponsorship, manage funds and reserve rooms for annual 23 event Science Olympiad invitational for 1000+ high school students.

## Publications

- Francesco Piccoli, Rajarathnam Balakrishnan, Maria Jesus Perez, Moraldeepsingh Sachdeo, Carlos Nunez, **Matthew Tang**, Kajsa Andreasson, Kalle Bjurek, Ria Dass Raj, Ebba Davidsson, Colin Eriksson, Victor Hagman, Jonas Sjoberg, Ying Li, L. Srikar Muppirisetty, Sohini Roychowdhury, "FuSSI-Net: Fusion of Spatio-temporal Skeletons for Intention Prediction". IEEE Asilomar SSC (Applications of Deep Learning I) 2020

- Matthew Rueben, Eitan Rothberg, **Matthew Tang**, and Maja Mataric, "Estimating and Influencing User Mental Models of a Robot's Perceptual Capabilities: Initial Development and Pilot Study." In Companion of the 2020 ACM/IEEE International Conference on Human-Robot Interaction (Cambridge, UK) 2020

## Skills

Python, Java, JavaScript, React, C, SQL, Firebase, PySpark, S3, EMR, ROS, Flask, LaTeX, Git