Joey Hejna

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Education

University of California, Berkeley | 4.0 GPA — Class of 2021

Major: B.S. in Electrical Engineering and Computer Science, intended Mathematics Minor

- UC Berkeley Regents and Chancellors Scholarship, UC Berkeley Engineering's Dean's List – top 10%
- Coursework: Data Structures, Algorithms, Discrete Math, Information Devices, Architecture

Stanford University Summer | 4.0 GPA — Summer 2016

- Coursework: Client-side Internet Technologies, Differential Equations for Engineers

Experience & Research

Intel AI Products Group | Artificial Intelligence Intern — *May 2018 -Aug 2018*

- Created demo projects for Intel OpenVino Model Optimizer with AWS DeepLens device, published tutorial.
- Explored gradient based model explanations in image-classification and NLP problems for generalized local estimations of differentiable models. Assessed explainability of adversarial generation via fast gradients.
- Documented workflows for AWS EC2, S3, and SageMaker for training and tuning largescale networks.

Switchboard | Android Developer (Contracted) — *Jan 2018 – Aug 2018*

- Developed professional Android voice messaging application for a Berkeley SkyDeck startup Switchboard.
- Managed client connection to custom API for user feed/status/notifications and multi-user audio recording and streaming with TokBox video chat REST API. Integrated with pre-existing iOS and Web App.
- Routed user events using SocketIO connection. Implemented socket guaranteed delivery with ack messages.

UC Berkeley Romps Group | Research Apprentice — *Jan 2018 - Present*

- Implemented Raspberry Pi based system for collection of humidity/temp/pressure data and SQL Storage
- Calibrated professional radiosonde atmospheric sensors and prototyped data transfer via serial bus.
- Researched/proposed a plan for 100m oscillating atmospheric helikite for measuring qualities of low cumulus clouds using modified electric winch, synchronized with payload sensors for altitude measurement.

Stanford Dept. Political Science | Research Assistant — *Jun 2016 – Aug 2016*

- Utilized Python's Natural Language Toolkit to parse and clean 1.3 Terabytes of Corporate 10K, 10Q filings
- Formed bigram datasets uses to predict corporate donation tendencies based on language usage or keywords
- Created web-based visualizer using JavaScript, SQL, and Google Charts API to allow researchers to view changes in word frequency over time, filtered by industry or location using schema like that of Google n-grams

Activities & Projects

Launchpad At Berkeley | AI / ML Developer — *Jan 2018 - Present*

- Designed method for unique object tracking in video using YOLOnet model to predict future locations. Developed algorithms using nearest neighbor clustering and regression models in addition to function fitting neural networks. Tuned system to robustness across 30 seconds of traffic video. Demo Online
- OpenCV implementation of face tracking and emotion detection with Haar Cascade filters and the Yale faces.

Computer Science Mentors | Discrete Math and Probability Instructor — *Aug 2018 – Present*

- Lead and prep materials for weekly student tutoring and review discussion sections for UC Berkeley CS 70.

First Robotics Competition | Team Captain — *Aug 2015 – Jun 2017*

- 1st place at the 2017 Ventura Robotics competition, competitor at the 2017 First Robotics Championship
- Lead team of over thirty students through the build process of two full sized $10k competition robots.
- Designed drive/mechanical systems, more than 200 solidworks components, fabricated on mill/lathe/3d printer

Skills & Awards

Programming: Java, Python, C, SQL, Tensorflow, Android, HTML/CSS, Javascript, Keras, AWS, Unix, Firebase
Engineering: Arduino Circuits, SolidWorks CAD, mill lathe & 3D printer fab, diff eq, multivar calc, stats, physics
Awards: 2017 Rambus Innovator of the Future Scholarship, 42nd California PF Debate 2017