Danny Quang

Email: dquang@ucsd.edu
Mobile: 925-577-8678

Github: github.com/dquangucsd
Portfolio: dquangucsd.github.io/dq-portfolio

Education

- **University of California, San Diego** — San Diego, California
  MS - Computer Science, BS - Computer Science — *Expected Graduation: 2025*

  Relevant Coursework: *Computer Networks, Graduate Networked Systems, Computer Security, Database System Principles, Operating Systems, Compiler Construction, Computer Architecture, Advanced Data Structures and Algorithms, Design and Analysis of Algorithms, Computer Systems and Systems Programming, Software Engineering, Multivariate Statistics/Statistical Learning, Representation Learning, Programming Languages, Web Client Languages, Robotic System Design and Implementation*

Skills

- **Languages**: Python, Java, C, C++, Assembly, R, Swift, HTML, JavaScript, CSS, SQL, Go, Rust
- **Frameworks**: ScikitLearn, Scipy, Matplotlib, Numpy, Pandas, Tensorflow (Keras), RegEx
- **Tools**: LaTeX, MATLAB, Vim, GitHub, Jupyter Notebook, VSCode

Work Experience

- **Software Engineering Intern at Wind River**: June-September 2023
  - Ported company's proprietary Real-Time Operating system (VxWorks7) to the Raspberry Pi Zero 2W
  - Designed a pinmux driver for the GPIO for general purpose ability
- **Tutor for UCSD CSE: CSE 110, CSE 29**: March-June 2023, March-June 2024
  - Tutor for CSE 110, which focuses on building a project with front end technologies (HTML, CSS, JS) from the ground up in teams. Teams employ AGILE practices, develop CI/CD pipelines (linter, etc.), and ownership of their roles as backend, Q&A, frontend, etc.
  - Tutor for CSE 29, which focuses on systems programming in C and software tools. Lead Logistics Team
  - Duties: Attend weekly Supervision/ASE(s) and staff meetings, manage and organize logistics, perform individual and group tutoring, conduct labs, content review and debugging, and Slack support
- **Data Analyst Intern at The Center for Community Energy**: June-October 2022
  - Aided in market research involving V2G data.
  - Web scraped multiple car company websites targeting key words with BeautifulSoup4(bs4), pandas, and numpy
  - Website: https://centerforcommunityenergy.org/danny_quang/
- **Webmaster for the American Institute of Aeronautics and Astronautics**: May 2022-November 2023
  - Position: Webmaster
  - Redesigned, maintained, and updated the website for elected positions and events for AIAA UCSD

Projects

- **Privacy Airtag**: C
  - Developed firmware for STM32 (ARM Cortex M4) board to act like an Airtag. Use Bluetooth Low Energy (BLE) driver to periodically broadcast signals to receiver when stationary for over 1 minute, turn off when moving to protect privacy
  - Detected movement with LSM6DSL accelerometer, wake when there is significant, successive movement
  - Minimized power consumption by 40% by turning off all components when possible except for the accelerometer, and only waking necessary components on significant interrupt events
- **Quadcopter**: Arduino, C++
  - Designed schematic, laid out board in Fusion 360, and developed firmware for flight
  - Firmware was designed to reliably send and receive signals for control (using proportional-integral-derivative "PID" controller) and feedback (filtered inertial measurement unit "IMU" signal)
- **Developed Web Application for Multi-Function Photo-Editing Platform**: JavaScript, CSS, HTML
  - Styled a responsive home, gallery, and edit page with CSS with rotate, brightness, etc.
  - Used localStorage in JavaScript and indexDB so users can work locally and store large images and developed unit tests with Jest and end-to-end tests with Puppeteer
- **Top Movies app**: Swift
  - Designed an app that pulls top movies using AlamofireImage in Swift from a movies database (https://api.themoviedb.org) and listed them out with a cover image on the left, the title at the top, and a synopsis directly below.
- **Developed Prediction Algorithm and Visualization for Beer Ratings**: Python, Numpy, matplotlib, sklearn
  - Utilized matplotlib to plot data, pandas to clean and organize data. Used techniques like TF-IDF(TfidfVectorizer()) to represent reviews as a vector
  - Tried different combinations of prediction techniques (e.g. bag of words+linear regression (with train-test splitting the data to train and test model), TF-IDF+SVM+linear regression, etc.)
  - Utilized GridSearchCV to determine optimum parameters to predict rating, and Pipeline to streamline the process