

# SARTHAK KHILLON

✉ skhillon@calpoly.edu 🌐 skhillon.me 📞 (916) 801-9709 📍 U.S. Citizen **in** sarthakhillon 🔄 skhillon

## EDUCATION

### B.S. Computer Science, Minor in Data Science

Sept. 2016 - June 2020

California Polytechnic State University, San Luis Obispo

- Computer Science: Artificial Intelligence, Systems Programming, Programming Languages (Functional Programming, Interpreters), Computer Organization, Discrete Structures, Object-Oriented Programming, Data Structures & Algorithms, Databases
- Data Science: Machine Learning, Data Science with Python, Statistical Computing with R, Regression Analysis, Multivariate Statistics

## SKILLS

**Languages:** Python, Java, Swift, C++, C, SQL, Bash/Batch, R, Typescript

**Technologies:** iPython/Jupyter, Cocoa (iOS), Angular, Flask, Scikit-learn, Tensorflow, NodeJS, Git, UNIX, SQL, GCP, AWS, React

## EMPLOYMENT

### Google · Software Engineering Intern · San Francisco, CA

June 2019 - Sept. 2019

- Added a new feature to the Google Pay iOS app with a projected 1.8 million monthly active users. To be released in early Q4 2019.
- Incorporated remote configuration capabilities to handle usage spikes and allow simple A/B testing on user groups.
- Wrote C++ and Objective-C++ to interface with core iPhone hardware APIs. Ran data through on-device machine learning content matcher.
- Created Swift structures for high-performance data streaming and buffering. Reduced algorithm complexity from quadratic to linear time.
- Architected feature with functional reactive programming principles to ensure maintainable code for asynchronous operations.

### General Electric · Digital Technology Intern · Redmond, WA

June 2018 - Aug. 2018

- Created web dashboard application using Angular and NodeJS for companies to monitor power grid.
- Independently created new dashboard simulator using Python, NumPy, and Pandas. Simulator allows configuration changes at runtime, reduces startup speed from 2 minutes to 3 seconds, and adds full test coverage.
- Added functionality to persist user state across load-balanced servers using Java Spring and Cassandra.
- Set up internal Geoserver using PostgreSQL for secure power station mapping.

### Flume · iOS Development Intern · San Luis Obispo, CA

Oct. 2017 - Jan. 2019

- Only iOS developer for an early-stage startup. Fully responsible for internal and external iOS applications.
- Architected, designed, and developed app to automate quality assurance on thousands of IoT devices at manufacturing site.
- Automation has removed need for external training, cut testing time by 10x, and cuts manufacturing costs by over \$100K/year.
- Improved homeowner app by adding support for multiple locations per user. Application is live at businesses and homes nationwide.
- Eliminated most common customer connectivity issue by filtering 2.4 GHz networks through TCP connection with internet bridge.

### Financial Engines · Mobile Engineer Intern, iOS · Sunnyvale, CA

June 2017 - Sept. 2017

- Worked in a 4-person team to ship a mobile app that lets customers manage their retirement portfolio.
- Adhered to MVVM design architecture and TDD principles. Wrote unit tests to cover 85% of highest-priority code. Presented work to team of engineers including VP of Technology.
- Filed and resolved several bugs involving race conditions, memory leaks, and UI/UX flaws which led to a timely, high quality release.
- Gained experience in software design patterns, Automatic Reference Counting, code lints, SDLC, Agile, and JIRA.

## PROJECTS

### Computer Science Department Chatbot (NLTK, Scikit-learn, Flask, Angular) — skhillon.me/bot

- Led an Agile team of 4 to develop a Chatbot for questions about the Computer Science and Software Engineering departments.
- Automatically scraped 25 websites using BeautifulSoup, then populated MySQL database using PyMySQL, SQLAlchemy, and Pandas.
- Personally used NLTK lemmatizer + tokenizer to process text, then used Scikit-learn's TfidfVectorizer + Cosine Similarity to match responses.

### Identification of "Political Trolls" on Twitter (Python, Scikit-learn) — skhillon.me/trolls

- Analyzed 200,000 tweets from over 400 identified "Political Trolls" on Twitter to build classifier.
- Prepared data by implementing TF-IDF text vectorization, splitting into training and testing sets, and normalizing data.
- Implemented Scikit-Learn's MLP Neural Network, performed hyperparameter tuning, and achieved 89% accuracy on validation set.