Sumukh Shivakumar

sumukhshiv@berkeley.edu | 813-618-1708 GitHub: sumukhshiv | sumukhshiv.github.io

Education

University of California, Berkeley, Berkeley, CA

M.S. Electrical Engineering & Computer Science

B.S. Electrical Engineering & Computer Science

Relevant Coursework:

- EE/CS: Machine Learning, Neural Networks, Artificial Intelligence, Data Science, Operating Systems, Security, Algorithms, Networking, Computer Architecture, Signals/Systems, Data Structures, Python/Scheme/SQL
- Math: Formal Methods, Probability Theory/Discrete Math, Multivariable Calculus, Linear Alg./Diff Equations

Skills

- **Proficient** in Python, Java, C, SQL, P; **Familiar** with Perl, JQuery, HTML/CSS/JavaScript
- Technologies: Docker, Kubernetes, Helm, Keras, PyTorch, Tensorflow, Pandas, Android

Experience

Orbital Insight, Inc: Software Engineer Intern

- Developed and Deployed new standalone Geolocation microservice, based on cellphone data, using Kubernetes
- Optimized analytics visualization microservice to use Kinetica, GPU enabled database

UC Berkeley - EECS Department: Undergraduate Researcher

- Building high level language to easily develop and deploy safe robotic systems under Prof. Sanjit Seshia
- Created formal specifications & verifying libraries for Adept Lab's Keystone Project
- Co-authored/Published 'Formal Specification for Deep Neural Networks'

Data Science 100: Undergraduate Student Instructor

- Teaching Assistant for intermediate DS course of ~1000 students
- Teach data science topics including: Modeling/Estimation, Feature Engineering, Classification, Hypoth. Testing
- Conduct weekly discussion sections, lab sections, and office hours & manage tutors, readers, and lab assistants

Orbital Insight, Inc: Software Engineer Intern

- Redesigned several core microservices to handle asynchronous calls to REST Proxy/Client -
- Created a new multilevel mocking framework for custom unit/functional testing of all microservices
- -Developed an order validation test to ensure proper delivery of satellite images from Planet
- Redesigned the main orbital portal authentication/authorization to use OAuth 2 protocol -

Verizon Communications Inc: Software Developer Intern in Network Systems

- Designed/Developed an internal framework using ELK Stack for the Dynamic Network Manager, providing Verizon employees real time usage analytics to better understand enterprise customer usage & resolve tickets
- Reduced ticket handling latency from 24 hours to ~ 60 mins.
- Created a Machine Learning Algorithm to optimize 5G Antenna placement

Mobile Developers of Berkeley: Director of Finances/Android Developer

- Manage all MDB finances on order of \$50k. Implemented new financial structure outlining a comprehensive. semester budget and detailed financial policies for other sectors of the organization
- Led a team of 4 to design, develop, & publish Android App *Preserve*, a smart grocery management system

Stanford University / Robot Perception and Action Lab (USF): Undergraduate Researcher May 2016 - Dec 2016

- Automated robot cooking tasks using a Functional Object Oriented Network under Dr. Yu Sun. -
- Enhanced cooking event understanding with YouTube videos, emphasis on obj. detection for network training
- Optimized robot task awareness through NLP and WordNet

Projects

- *CheXNet* (Python/PyTorch): Implemented ML model to detect and localize pneumonia in images of chest x-rays.
- Preserve (Java/Android): Grocery tracker that notifies users when food items expire using OCR technology with Google Mobile Vision API, Firebase database, and intuitive UI/UX
- Verizon 5G Antenna Placement (Python/ML): Automated 5G antenna placement using machine learning to optimize for geographical location, 5 different antenna types, cost, and coverage.

Honors



August 2017 – Present

Aug 2019 - May 2020 Aug 2015 – May 2019

Fall 2018 – Spring 2019

Summer 2017

Summer 2018

Summer 2019

Jan 2017 - Present