Karthik Vegesna

Contact Information

Phone: (415) 619-7583
Email: kvegesna@berkeley.edu
Personal Website: `kvegesna.github.io`
Linkedin: `linkedin.com/in/karthikvegesna/`

Education

University of California, Berkeley, Berkeley, CA **Aug 2018 - May 2022**

B.A., Computer Science, Molecular & Cell Biology (GPA: 3.6)

- Relevant Coursework: Structure and Interpretation of Computer Programs, Data Structures and Algorithms, Discrete Math and Probability Theory, Information Device & System Design I and II, Computer Architecture, Principles and Techniques of Data Science, Efficient Algorithms and Intractable Problems, Deep Learning & Neural Networks, General Biology, Organic Chemistry 1, Biophysical Chemistry
- Organizations: Cal Football Student Manager, Pi Kappa Phi, Berkeley Economic Review, Project Smile, Sage Mentorship Project, IM Basketball, Medical Reallocation Initiative
- Awards: Foreign Language & Area Studies Fellowship (Full-Ride for Spring 2020), Cal Alumni Association Leadership Award (x2)

Research Experience

Drubin Laboratory, Berkeley, CA **January 2021 – present**

Independent Researcher & Summer 2021 SURF Fellow

- Conducted independent research focused on mathematical modeling of impact of crosslinking proteins on endocytic efficiency
- Perfomed mixed methods research to quantify molecular mechanism behind diseases marked by viral entry and to understand core physiological processes using biophysical simulations.
- Received paid SURF Fellowship for Independent Research & research presented at SURF conference and as senior thesis.

Drubin Laboratory, Berkeley, CA **April 2020 – November 2020**

Summer & Fall 2020 Research Intern

- Worked on computational modeling of actin and associated proteins at endocytic sites based on novel Cryo-Electron Tomography data with Prof. Matt Akamatsu and postdoc Daniel Serwas.
- Conducted thorough simulations using Cytosim that showed increased cell membrane internalization with Hip1R proteins at endocytic sites which were identified by recent Cryo-ET
- Published these insights as a preprint in Bioxiv and pending review from a high impact factor scientific journal

Professional Experience

Open Networking Foundation, Menlo Park, CA **June 2017 – August 2017**

Software Engineering Intern

- Developed a project on packet statistics for network debugging, by parsing through individual packet metadata to determine volume and emergent behavior of network traffic.
- Created a web UI displaying collected packet statistics using a Web-UI API and d3 Library.
- Successfully presented the product and its applications to several service providers and ONF's technical staff at the end of my internship.
- Project was approved and implemented in their latest release, and the application is currently being used in several large-scale software defined networks in industry. (`bit.ly/2ufXhGs`).

Personal Projects

EMTranslate: Co-Founder and Developer **May 2019 – present**

- Created EMTranslate, a healthcare startup in development, with three other Berkeley students.
- Designing an app to help emergency medical technicians communicate with patients with limited language proficiency and incubated by Berkeley SkyDeck.

Teaching Experience

Undergraduate Student Instructor for EE16A **June 2019 – Jan 2020**

TA for EE16A, an introductory linear algebra and circuit analysis course, with 1000 students.

Skills

Concepts: Data Science, Algorithms, Cell Biology, Computer Architecture, Probability Theory
Languages: Java, Matlab, Python, R, C++, LaTeX