Karthik Vegesna

Contact Information

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Education

University of California, Berkeley, Berkeley, CA **Expected Graduation: May 2022**

B.A., Computer Science, Molecular & Cell Biology (GPA: 3.54)

- Relevant Coursework: Structure and Interpretation of Computer Programs, Data Structures and Algorithms, Discrete Math and Probability Theory, Linear Algebra and Introductory Circuit Analysis, Computer Architecture, Principles and Techniques of Data Science, Efficient Algorithms and Intractable Problems, General Chemistry, General Biology, Organic Chemistry 1, Optimization Models in Engineering
- Organizations: Cal Football Student Manager, Pi Kappa Phi, Berkeley Economic Review, Project Smile, Sage Mentorship Project, IM Basketball
- Awards: Foreign Language & Area Studies Fellowship (Full-Ride for Spring 2020), Cal Alumni Association Leadership Award

Research Experience

Drubin/Barnes Laboratory, Berkeley, CA **April 2020 – present**

Undergraduate Researcher

- Worked on computational modeling of actin and associated proteins at endocytic sites based on novel Cryo-Electron Tomography data with post-docs Matt Akamatsu and Daniel Serwas. Expected to publish results as a co-author in an impactfu journal with preprint available in late 2020.
- Contributed to a collaboration with the Allen Institute of Cell Science through ongoing development and debugging of Simularium, a platform to visualize local spatial mechanistic simulations in the context of larger cells
- Developed simulations and visualization tools for actin behavior at endocytic sites using Cytosim and Blender.

Professional Experience

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

Software Engineering Intern

Spent two months at ONF implementing network research from the previous summer.

- 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 the collected packet statistics using a specialized 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 Backend 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, through questions in native language and aided physical cues.

Research Paper: An Investigation into Quarterback Durability **Feb 2019 – April 2019**

- Worked on a project that applied MCMC models to player tendencies to determine which quarterbacks were at the highest risk of injury.

Teaching Experience

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

Reader for EE16A, an introductory linear algebra and circuit analysis course, with 1000 students where I grade homeworks, exams, and offer input into course content and material.

Skills

Concepts: Data Science, Backend Development, Stochastic Processes, Probability Theory
Languages: Java, Matlab, Python, C++, LaTeX