Vaibhav Bhat

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EDUCATION

University of California, Berkeley

BA in Computer Science
BA in Astrophysics
Graduated Dec 2020

SKILLS

Languages (in order of fluency)

Java • Python • C • HTML • PHP • CSS
Go • jQuery • JavaScript • SQL • RISC-V
Swift • and… English • Hindi • French

Frameworks/Tools

Tensorflow • Keras • Jupyter • Numpy •
Spring • Terraform • Packer • JUnit • Git
React • Adobe Creative Suite • Sketch

COURSEWORK

Computer Science

CS61A Interpeting Programs
CS61B Data Structures
CS61C Computer Architecture
and Machine Structures
CS70 Discrete Mathematics
and Probability Theory
CS160 Interface Design
CS161 Computer Security
CS162 Operating Systems
CS188 Artificial Intelligence
CS170 Algorithms/Complexity Theory
EE127 Convex Optimization

Astrophysics

Chem 1A General Chemistry
Chem 3A Organic Chemistry 1
Physics 7A/B/C Intro. Physics Series
BioE 104 Bio. Transport Phenomena
BioE 102 Biomechanical Analysis
Astron 160 Stellar Physics
Astron 161 Cosmology
Astron 162 Planetary Physics
Astron 128 ML Data Lab
Physics 137A Quantum Mechanics

OTHER ACTIVITIES

• Competitive runner and Obstacle
Course Racer (2xWorld Champion)
• Member of UC Berkeley's national
circuit AZAAD dance team
• Avid singer and guitarist

EXPERIENCE

UC Berkeley Astronomy | Machine Learning Researcher

May 2020 - Present | Berkeley, CA | https://github.com/vaibhavrdbhat/gaia_vae
- Reseaching the use of autoencoders to compress large astronomical data sets while maintaining feature distribution, with promising results.
- Exploring deep learning methods for cosmic ray rejection in ground-based imaging.

Scalyr | Software Engineering Co-op (Backend + API)

January 2019 - August 2019 | San Mateo, CA
- On the Backend team, I developed infrastructure for the Scalyr product/API and revamped legacy DevOps tools; my current improvements are still in use today.
- On the API team, I was put in charge of a major project regarding the migration of all users' preferences: database schema design, development of a cross-database interface in Java, and migration of all production user data from DirectDB to MySQL.

ARM | IoT Engineering Summer Intern

June 2018 - August 2018 | San Jose, CA
- Designed an automation system for the scalable deployment of AWS EC2 instances for IoT clients using Spring, Terraform, and Packer. Integrated instances with PostgreSQL.
- Assisted in the creation of Arm's IoT pipeline to collect and analyze data from millions of ARM devices using EMQTTD on EC2 nodes.

Acorns Grow | Lead iOS Design/Development Intern

June 2017 - August 2017 | Irvine, CA
- Solo prototyped potential new features, running them through A/B user testing and multiple iterations. Presented revised ideas to the engineering team to be developed.
- Redesigned the Acorn app's Found Money page, used by thousands of customers on a daily basis, to match the new UI across the rest of the app and to increase usability.

Acorns Grow | Web Development and iOS Design Intern

June 2015 - August 2015 | Irvine, CA
- Implemented design changes for the Acorns web app using PHP/Javascript/jQuery.
- Solo redesigned the Settings and Signup sections of the iOS app, starting with prototyping and ending with my design being deployed in an update to the App Store.

PROJECTS

PintOS Operating System | CS162 (2019) | C, RISC-V

In a group of 4, implemented a functioning operating system in C over 4 months. The main components were thread manager, file system, cache, and user programs. This project involved weeks of system design, prototyping, whiteboarding, and debugging.

Compressed Log Flow | Scalyr (2019) | Java

I implemented improved GZIP compression of terrabytes of log flow from some Scalyr's biggest clients, reducing bandwidth usage by up to 70%.

Preferences Migration | Scalyr (2019) | Java, MySQL

Redesigned the preferences system design for Scalyr users and migrated the entire user base to SQL. Designed the new schema, all java classes, and synchronization tasks for migration.

Deployment System | ARM (2018) | Java, C, Python

Designed an automated system to setup, deploy, and maintain AWS EC2 instances for IOT clients. My system automatically grew, trimmed, and recycled their allocation of machines.

BearMaps | CS61B (2018) | Java

Java implementation of a maps program for the city of Berkeley. Handled image rastering, A* implementation for finding optimal routes, and graph representation of city data.