Joey **Zhu**

(+1) 925-858-2048 | joey.j.zhu@berkeley.edu | https://joey-j-zhu.github.io/ | joey.j.zhu | joey-j-zhu

Education

University of California, Berkeley — *Berkeley, CA*
B.A. Computer Science — *Aug. 2019 - Exp. May 2023*

CS (3.5 GPA) Machine Learning, Data Structures, Algorithms, Random Processes, Computer Architecture, Information Systems
Physics (3.7 GPA) Statistical Physics, Analytic Mechanics, Perturbation Theory, Quantum Mechanics, Electrodynamics

Skills

Programming Python, Java, JavaScript, Node.js, Express, C, Processing, React, HTML, CSS
Tools and Frameworks Git, Numpy, Scipy, RESTful APIs, PyTorch, MongoDB, Photoshop, Illustrator
AWS CDK, ECS, DynamoDB, SQS, Lambda, SES
Soft Skills Planning, Organization, Problem Solving, Graphic Design

Work Experience

Amazon — *Seattle, WA*
SDE Intern — *Jan. 2022 - May 2022*

- Designed emailing system to facilitate communication between domain administrators and users lacking domain permissions, using SQS, DynamoDB, SES, and Lambda
- Resolved system warning tickets of high request traffic, and updated dependencies to prevent security risks

NimbleRx — *Redwood City, CA*
SWE Intern (Incoming) — *May. 2022 - Aug. 2022*

- Incoming Software Engineering Internship

UC Berkeley EECS Dept. — *Berkeley, CA*
Academic Intern — *Jun. 2020 - Oct. 2020*

- Worked with instructors in Data Structures (CS 61BL) and Discrete Mathematics (CS 70) courses to debug staff auto-graders and student labs
- Led sections of two groups of 25 students each, created practice material to help build intuition for data structures and mathematical proofs

UC Berkeley IEEE — *Berkeley, CA*
Marketing Committee, Graphic Designer — *Aug. 2020 - Jul. 2021*

- Created main designs for yearly apparel order
- Led apparel design project with two other designers and coordinated distribution logistics with executive members

Projects

NP Set Partition — *Berkeley, CA*
place N students into Zoom breakout rooms to optimize total ”happiness” while keeping under a ”stress” threshold, of which each pair of students has unique values of such — *Dec. 2020*

- Led implementation of the main solution structure, combining stochastic gradient descent and genetic algorithms
- Improved quadratic-time validity computations to linear-time, and linear-time sampling to amortized constant-time
- Generated pathological test inputs to test the resilience of solver

Perlin Mapping — *Home*
Tune Perlin fractal noise parameters to visually approximate and manipulate images — *Jun. 2021*

- Lowered squared raster error from 300k to less than 1k for images with varying features, via gradient descent and error-passing for successive octaves
- Adjusting program and exploring more parameters for gradient descent process to behave more predictably and produce numerically similar parameters for visually similar images or successive frames