Brandon Penilla

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Education

The University of California, Berkeley — Berkeley, CA
Bachelor of Science - Electrical Engineering and Computer Science — Expected Graduation - May 2024
Honors - UC Regents and Chancellor's Scholarship Finalist, Questbridge Scholar, Hispanic Scholarship Fund Scholar, Texas Instruments Undergraduate Research Scholar, Conquering our Struggles Scholarship
Relevant CourseWork - CS61B | Data Structures, CS61C | Machine Structures, EECS 16A | Designing Information Devices and Systems I&II, CS70 | Discrete Mathematics and Probability Theory, CS161 | Computer Security, CS170 | Efficient Algorithms

Skills

Java, Python, C, RISCV, Web Development, Golang, Scheme, SQL, Spanish, Git, Regex, Github, Bit Manipulation, Git, IntelliJ IDEA

Experience

Data Structures and Algorithms Deep Dive Instructor — 08/2022 - Present
- Facilitated and lead mentoring sections twice a week for over 25 Berkeley students in CS61B
- Delivered engaging mini-lectures, and completed problem-based worksheets for student understanding.

CS61B Course Staff (Academic Intern) — 08/2022 - Present
- Collaborated with TAs and taught over 55 students in weekly labs sections helping them debug their code.
- Aided multiple students during office hours to ensure academic success and deep understanding of course material.

Project Brightline Data Analyst — 12/2021 - 7/2022
- Analyzed trends in pm2.5 air quality data collected for over 2 years using 15 Clarity Node-S Sensors in the San Francisco tenderloin and Market street.
- Collaborated with legislative city officials to provide aid for the thousands of community members disproportionately affected by environmental racism through organized and informative presentations and data analysis reports.

PrimeraVista Co-Founder — 04/2021 - Present
- Developed class curriculum & taught introductory Python to more than 30 low-income high school students in STEM.
- Hosted professional support workshops twice a week which increased success in college applications by 30%

Berkeley PREP Calculus Instructor — 06/2021 - 08/2021
- Planned and organized technical instruction for over 80 incoming low-income Berkeley students.
- Maximized student learning of underrepresented minorities in engineering which increased overall scores

Programming Projects - Repo access available upon request

Encrypted File Sharing System - Golang
- Applied cryptographic primitives to design and implement a client application for a secure file sharing system.
- Accomplished using AES-CTR and RSA-OEAP encryption to provide confidentiality as well as RSA digital signatures and HMACs to ensure integrity.

Enigma Encryption Machine - Java — https://github.com/I-am-brandon/Enigma-Machine (private)
- Translated an analog Enigma machine into code that functions like its original used in WW2 to encrypt input.
- Accomplished primarily using scanners, Hashmaps, String Manipulation(Regex), and ArrayLists.

Jump Game with AI - Java — https://github.com/I-am-brandon/JumpGame (private)
- Built classic jump game with support for human players and AI that finds the optimal move to make with adjustable difficulty.
- Achieved by recursively using the MiniMax algorithm which incorporated Alpha-Beta Pruning and through Stacks, 2D Arrays, and ArrayDeques.

Gitlet Version Control System - Java — https://github.com/I-am-brandon/Gitlet (private)
- Built a version-control system that utilizes SHA1 hashing system and serialization to maintain persistence of files within the program, with the ability to commit file changes, revert to previous versions, and create branches.
- Implemented through the use of the breadth-first search algorithm, sets, maps, deques, and other data structures.

Leadership & Extracurricular

Alpha Tau Omega, CS Scholars, Engineering Scholars as Engaged Scholars, ASUC, Project Brightline, Semiconductor Research Corporation, Hispanic Engineers and Scientists, Berkeley Pre-Engineering Program(PREP), SkatingBoardingAtBerkeley, HSF Stem Conference (2022 Attendee), Tapia Conference (2022 Attendee)