

Bassem Halim

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🌐 bassem-halim | 👤 BassemHalim | 🏠 Berkeley, CA

EDUCATION

University of California, Berkeley

Berkeley, CA

Bachelor of Science in Electrical Engineering and Computer Science (EECS)

Dec. 2022

- **Relevant Coursework:**

Operating Systems (C, x86), Data Structures (Java), Machine Structures (C, RISC-V), Efficient Algorithms, Embedded Systems (C), Artificial Intelligence, Computer Security, Databases, Computer Vision

- **Cumulative GPA:** 3.54

EXPERIENCE

Pi Variables

Tustin, CA

Software Developer Intern

May 2022 – Aug 2022

- Contributed to the research and development of a decimeter-level accurate GPS receiver.
- Wrote a custom driver for a GNSS module.
- Helped testing and debugging an IoT impact detection system.
- Improved an internal logging tool's efficiency by 30% as measured by CPU utilization.

PROJECTS

To Do List | *Python, Django, PostgreSQL*

Mar. 2023 – Mar. 2023

- Built a To-do service with a RESTful API that enables users to create, read, update, and delete tasks.
- Implemented user registration and authentication functionality to secure user data.
- Utilized PostgreSQL as the database for storing tasks and integrated Django's ORM to efficiently query and modify task data.

End-to-End Encrypted File Sharing system | *Golang*

Mar. 2022 – May 2022

- Used symmetric encryption to encrypt and decrypt the users' data and allow for multiple user sessions.
- Developed an algorithm to securely and efficiently store, load, and append to files.
- Used asymmetric encryption to share files securely using public key encryption and digital signatures.

PintOS | *C*

Feb. 2022 – May 2022

- Worked in a team of 4 to implement various functionalities in an educational OS for the x86 architecture.
- Implemented the functionalities to create threads, fork processes, and pass arguments to user programs.
- Improved the file system speed by adding a buffer cache.
- Helped with the development of an MLFQ scheduler.

Digit Classifier | *Python, Artificial Intelligence*

Apr. 2022 – Apr. 2022

- Used machine learning to classify handwritten digits.
- Achieved an accuracy of 97% by designing and training a neural network that recognizes patterns in handwritten digits.

2D World Exploration Game | *Java*

Apr. 2021 – May 2021

- Collaborated with a teammate to develop a random world generation engine, with a GUI, that generates a random 2D explorable world based on a string of numbers inputted by the user.
- An avatar is placed randomly in the generated world and the user can interact with the avatar using the keyboard.
- Implemented the ability to save and reload the game locally.

Gitlet | *Java*

Feb. 2021 – Apr. 2021

- Developed a local version control system with a command-line interface capable of handling 15 Git-like commands, including add, commit, branch, checkout, merge, reset, log, and more.
- Efficiently stored previous versions of the project, and the commit tree, locally using multiple data structures such as Hash tables, Hash sets, Linked Lists, etc.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL, Go, MongoDB, HTML, CSS, x86, RISC-V

Tools/libraries: Git, Linux, Valgrind, GDB, NumPy, JUnit, CMake, OpenMP, SIMD, VIM, Django, Postman.