

Hilal Morrar

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EDUCATION

University of California, Santa Cruz

September 2018 – June 2022

Bachelors of Science, Computer Science

Santa Cruz, CA

- Cumulative GPA: 3.43, Dean's Honor List in Spring 2019, Summer 2020.
- Coursework: Software Engineering, Data Structures and Algorithms, Distributed Systems, Machine Learning, Operating Systems, Parallel Programming, Artificial Intelligence, Statistics, Numerical Analysis

EXPERIENCE

Computer Science Undergraduate Teaching Assistant

September 2019 – June 2022

Baskin School of Engineering - Computer Science and Engineering Department

Santa Cruz, CA

- Led regular tutoring sessions for Applied Discrete Math, Computer Systems and Assembly Language, and Introduction to Python courses.
- Students consistently rated my sessions at least 8/10 and noticed an average grade increase of 9%.
- Designed and graded weekly quizzes and Python assignments for Artificial Intelligence, Machine Learning courses.

Frontend Software Engineer

July 2020 – September 2020

UC Santa Cruz - Resilient Renewable Efficient Energy Systems Lab

Santa Cruz, CA

- Worked in an Agile team environment to build a device to monitor energy data in a residential network.
- Developed the frontend of a UCSC research lab website using React and JavaScript for UI/UX design.
- Connected frontend and backend to send, receive, and process user input for device registration via JSON.

RESEARCH

Applied Machine Learning Lab Research Assistant

September 2020 – August 2021

Baskin School of Engineering - Computer Science and Engineering Department

Santa Cruz, CA

- Assisted on two projects in cognitive electrophysiology and data science under Professor Narges Norouzi.
- Designed and implemented various convolutional neural network architectures to make predictions based on time-series data with PyTorch.
- Parallelized and distributed model training across several cloud GPU clusters with Kubernetes to reduce training time by 50%.

PROJECTS

RustOS | *Rust, Git*

January 2023 – Present

- Building a simple Operating System in Rust as a way to take a project-based approach to learning the language.
- Implementing all basic parts of the system including CPU Interrupts, Memory Management, and Multitasking.

TagMe | *Electron, Go, Git, Node.js, HTML/CSS*

January 2022 – March 2022

- Worked in an Agile team to make a cross platform, full stack desktop application to search files by custom tags.
- Responsible for UI and frontend functionality, designed and implemented backend unit tests in Node.js.

Distributed Key-Value Store | *Go, Git, Docker*

September 2021 – Decemeber 2021

- Developed the back-end API of a distributed, fault tolerant, consistent, and sharded key-value store.
- Utilized Goroutines for concurrency when handling client and internal HTTP requests for system communication.
- Implemented a data hashing algorithm to broadcast and separate data across multiple nodes equally.

IEEE Hack-a-Bot | *Arduino, C++, Git*

January 2019

- Designed and helped build robot body to efficiently complete the challenge to win a 1st place prize.
- Responsible for developing C++ code in an Arduino library to control forward, backward, and rotational movement.

TECHNICAL SKILLS

Languages: Go, Python, C, C++, Java, Assembly, JavaScript, HTML/CSS, Rust

Frameworks/Libraries: Agile, Gin, PyTorch, TensorFlow, NumPy, pandas, Keras, scikit-learn, Electron, React

Developer Tools: Git, Docker, Command Line, Google Colabs, Jupyter Notebooks, Linux/Unix, Kubernetes