

# 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: Machine Learning, Artificial Intelligence, Distributed Systems, Operating Systems, Parallel Programming, Data Structures and Algorithms, Software Engineering

## EXPERIENCE

### Computer Science Undergraduate Teaching Assistant

March 2020 – 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.
- Gained experience in reading code written by others and debugging it to achieve desired behavior.
- Designed and graded weekly quizzes and Python assignments for Artificial Intelligence, Machine Learning courses.

### Applied Discrete Mathematics Learning Assistant

September 2019 – December 2020

*UC Santa Cruz Learning Support Services*

*Santa Cruz, CA*

- Tutored over 150 students in Applied Discrete Math in 4 academic terms.
- Led tutoring sessions for peers to comprehend concepts and practice mathematical proof solving skills.
- Worked closely with supervisors to continually implement optimal tutoring practices.

## 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 deep machine learning model architectures deployed on GPU computing clusters with Kubernetes to make predictions based on time-series EEG data.
- Read literature and gaining deep conceptual and technical understanding of cognitive data analysis.

### Principal Investigator

August 2015 – June 2018

*Waksman Student Scholars Program*

*Tracy, CA*

- Taught molecular biology & bioinformatics concepts and skills as a Principal Investigator for two years.
- Published 9 scientific works into a national biotechnology database, while mentoring 35 students each year.

## PROJECTS

### 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 front end functionality, designed and implemented backend unit tests.

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

September 2021 – December 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.

### Connect4 Artificial Intelligence Agent | *Python*

October 2020

- Built a Connect4 AI to play against a human, random move player, or another AI with a simple user interface.
- Implemented Alpha-Beta and ExpectiMax algorithms for the AI to use against other AI agents or players.

## TECHNICAL SKILLS

**Languages:** Go, Python, C, C++, Java, Assembly, JavaScript, HTML/CSS, R, MATLAB

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

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