

Hilal Morrar

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EXPERIENCE

Software Engineer Intern

May 2024 – August 2024

Cisco Systems - Duo Security

San Francisco, CA

- Improved an internal performance testing tool by adding a feature using Python, AWS EC2, and MySQL to dynamically create simulated customers and production HTTP requests.
- Executed load testing suites with GitHub CI/CD pipelines to monitor and validate software release performance metrics for 50k users using Datadog, Grafana, and Kibana dashboards for observability and incident response.
- Diagnosed and fixed deployment issues in Kubernetes clusters with Python and Docker, contributing to improved system reliability and reducing the risk of service degradation or on-call incidents.

Software Engineer Intern

May 2023 – August 2023

Stealth Startup

Remote

- Designed and implemented a REST API for a distributed, fault tolerant, consistent, and sharded key-value store using Go and Docker.
- Utilized Goroutines for concurrency when handling client and internal HTTP requests for system communication.
- Developed resharding algorithm and internal API routes to support dynamic replica coordination and data rebalancing, and Bash scripts to automate setup/teardown processes to improve development efficiency by 30%.

Machine Learning Engineer

September 2020 – August 2021

Applied Machine Learning Lab

Santa Cruz, CA

- Led the design and training efforts of various neural network model architectures to make predictions based on time-series data with PyTorch.
- Achieved 95% accuracy as measured by model validation metrics by tuning machine learning models with hyperparameter optimization, regularization, and pruning.
- Reduced model training time by 50% by improving data processing pipeline and distributing training in a Kubernetes GPU cloud cluster.

Frontend Software Engineer

July 2020 – September 2020

Resilient Renewable Efficient Energy Systems

Santa Cruz, CA

- Built a user interface to register IoT devices using React, JavaScript, and AWS S3 for data storage in collaboration with hardware and product teams.
- Coordinated end to end integration with backend services on AWS EC2, ensuring smooth device onboarding and monitoring workflows.
- Raised user experience and accessibility scores by 17% based on Lighthouse audits by optimizing data handling, adding client-side input validation, and implementing UI fixes.

PROJECTS

Connect4 Artificial Intelligence Agent | *Python*

- Developed an AI agent for Connect4 using heuristic evaluation to simulate strategic gameplay across multiple player configurations.
- Programmed game state tracking and board evaluation algorithms to support turn-based decision making.
- Engineered gameplay framework to support modular AI, human, and random players for dynamic matchups.

EDUCATION

University of Texas at Austin

August 2023 – December 2024

Masters of Science, Computer Science

Austin, Texas

- Coursework: Artificial Intelligence, Database Systems, Distributed Systems, Prediction in Computer Architecture

University of California, Santa Cruz

September 2018 – June 2022

Bachelors of Science, Computer Science

Santa Cruz, CA

TECHNICAL SKILLS

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

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

Developer Tools: Atlassian, Docker, Git, Jira, Kubernetes, Linux/Unix, MySQL, PostgreSQL, Slack, Terraform