Hilal Morrar

U.S. Citizen | 510-520-9271 | hilalmorrar@gmail.com | hilalmorrar.com

EDUCATION

University of Texas at Austin   August 2023 – May 2025
Masters of Science, Computer Science   *Austin, Texas*
University of California, Santa Cruz   September 2018 – June 2022
Bachelors of Science, Computer Science   *Santa Cruz, CA*

EXPERIENCE

Software Engineer Intern   May 2024 – August 2024
Cisco Systems - Duo Security   *San Francisco, CA*
- Engineered a new feature to an internal performance load testing tool using Python, AWS EC2, and MySQL to dynamically create simulated customers and production HTTP requests.
- Created reports for software release tests executed with GitHub CI/CD pipelines to monitor performance metrics for **50,000+ concurrent users** with Datadog, Grafana, and Kibana dashboards.
- Resolved faulty pod monitoring in Kubernetes deployments using Python to eliminate silent job failures or stalled pods and **saved 10% on AWS resources**.

Software Engineer Intern   May 2023 – August 2023
Stealth Startup   *Remote*
- Designed a RESTful API and implemented DELETE request functionality for a distributed, fault-tolerant, and consistent key-value store using Go and Docker.
- Developed internal API routes to support dynamic server coordination, data rebalancing, and Bash scripts to automate setup/teardown processes to **improve development efficiency by 30%**.
- Utilized Goroutines for concurrency when handling client and internal HTTP requests for system communication.

Machine Learning Engineer   September 2020 – August 2021
Applied Machine Learning Lab   *Santa Cruz, CA*
- Led the design and training efforts of various CNN model architectures for time-series data with PyTorch.
- Achieved **95% accuracy** by tuning machine learning models with hyperparameter optimization.
- Distributed model training with PyTorch DDP in a Kubernetes GPU cloud for a **50% reduction in training time**.

Frontend Software Engineer   July 2020 – September 2020
Resilient Renewable Efficient Energy Systems   *Santa Cruz, CA*
- Built a registration UI using React, JavaScript, and AWS S3 for an IoT device with hardware and product teams.
- Coordinated end to end integration with backend services on AWS EC2 to ensure smooth device onboarding.
- Optimized data handling and client-side input validation to **raise user experience and accessibility scores by 17%** based on Google Lighthouse audits.

PROJECTS

JuiceFS | *AWS EC2, AWS S3, GitHub, Go, PostgreSQL, Python*
- Extended an open source, distributed file system to support a new object storage API to enhance performance in large-scale distributed environments.
- Implemented a storage interface in Go that resulted in **up to 14% improvement in read/write metrics** for larger files using AWS and PostgreSQL.
- Automated performance tests in Python with a dual benchmarking workflow to collect data and validate the custom storage backend.

Connect4 Artificial Intelligence Agent | *Python*
- Developed an AI agent using heuristic evaluation to simulate strategic gameplay for 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.

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