HAAKON MONGSTAD

haakon@utexas.edu • (832) 600-8113 • linkedin.com/in/haakon-mongstad

EDUCATION

The University of Texas at Austin — Bachelor of Science in Electrical/ Computer Engineering; Software Design — *May 2025*
Overall GPA: 3.81

Relevant Coursework: Reinforcement Learning, Computer Vision, Software Lab, Operating Systems, Algorithms, Embedded Systems

EXPERIENCE

Intel – *Software Engineer Intern*; Austin, TX — *May 2024 – Present*
- Developing machine learning models to predict SRAM performance based on input design parameters, accelerating the design process by eliminating the need for extensive simulations.

Modern Intelligence – *Machine Learning Engineer Intern*; Austin, TX — *May 2023 – December 2023*
- Automated the dataset creation and labeling process by incorporating object detection and reidentification models to efficiently generate PostgreSQL datasets, allowing rapid iterations of object reidentification model training and validation.
- Designed a method for quantifying and evaluating model performance using various vector analysis techniques, offering comprehensive insights into model efficiency and accuracy.
- Integrated an LLM to convert natural language into SQL queries for database retrieval in product.
- Collaborated with senior engineers and researchers to explore strategies that improve model performance and efficiency.

Texas Spacecraft Laboratory – *Software Engineer;* Austin, TX — *November 2022 – December 2023*
- Optimize computer vision model for satellite mounted camera array to detect and track objects in three-dimensional space.
- Aided the development of an autonomous pose estimation and prediction algorithm using a convolutional neural network.

PROJECTS

Conversational Recommender System (CRS) — *Spring 2024-Present*
- Designing CRS integrating LLMs for multi-turn dialogue that boosts user control and improves contextual recommendations.
- Developing training paradigm, embedding conversational context and user data as input for the recommender system.

Fashion Atlas - https://github.com/troydutton/fashion-atlas — *Spring 2024*
- Built a clothing recommendation app that detects clothing items in images and returns similarly styled clothes.
- Trained ResNet architecture with contrastive learning to generate semantically rich embeddings from clothing images.
- Implemented inference pipeline that detects clothing from image, generates embedding via encoder network, and searches for similar clothing embeddings in vector database which is split in buckets for optimized search speed.

Hindsight Experience Replay for Diffusion Models- https://github.com/HaakonMongstad/HERD — *Spring 2024*
- Introduced reinforcement learning method to finetune text-to-image diffusion models for complex prompts.
- Implemented and benchmarked policy gradient RL algorithms (DDPO and DPOK) to finetune Stable-Diffusion.

Library Management Application - https://github.com/HaakonMongstad/LibraryApp — *Spring 2023*
- Developed an efficient Java backend management system, complemented by a user-friendly front-end interface.
- Integrated socket programming and multi-threading, with an observer pattern for efficient client-server communication.
- Leveraged MongoDB for efficient item management, facilitating smooth data transactions and consistent database updates.

Optiver Ready Trader One - https://github.com/HaakonMongstad/pyready_trader_go — *Spring 2023*
- Built a high frequency trading bot, implementing market making strategies to compete in an auto trading competition.
- Utilized quantitative analysis and risk management principles to achieve a profit of $12,000 in a simulated OPTI-ETF market.
- Researched trading strategies to build bots for a comprehensive performance comparison between various algorithms.

SKILLS

Programming: Python, Java, C++, C, Assembly Language, JavaScript, HTML, CSS
Frameworks/ Tools: PyTorch, TensorFlow, Flask, MongoDB, PostgreSQL, Docker, React