Hailey A. Reed

Milford, CT • +1 (475) 224 7376 • hailey.reed@uconn.edu

LinkedIn: linkedin.com/in/hailey-ann-reed • Portfolio: haileyannreed.github.io/portfolio

Education

University of Connecticut Storrs, CT

Bachelor of Science, Major in Computer Science, Minor in Mathematics • GPA: 3.6/4.0 2022-2026

• Concentration in Computational Data Analytics • Honors Program • UConn STEM Scholar Community.

• Relevant Coursework: Graduate-Level Machine Learning, Artificial Intelligence, and Principles of Databases.

Research Experience

Undergraduate Research Assistant Storrs, CT

Project: *Financial Time Series Modeling for Quantitative Finance* May 2025 – Present

Advisor: Professor Joseph Johnson

• Conducting research on modeling and forecasting financial time series using machine learning techniques.

• Investigating predictive indicators for financial markets and implementing quantitative models in Python.

• Modeled alpha generation strategies; evaluated predictive performance using F1 and ROC.

Undergraduate Research Assistant Storrs, CT

Project: *Improving Image Segmentation using Few-Shot Learning* Jan 2025 – Present

Advisor: Dr. Qian Yang | Scientific & Computational Machine Learning Laboratory (SciMaLL)

• Researching few-shot learning in computer vision to develop a Semi-Siamese Neural Network for change detection.

• Trained U-Net and Semi-Siamese models in PyTorch; benchmarked against SOTA, refining for manufacturing conditions.

• Collaborating with faculty and PhD mentors to transition the research into a deployable product for industrial use.

Leadership & Innovation

Entrepreneurial Lead – Accelerate UConn (NSF I-Corps) Cohort 32 Hartford, CT

UConn Center for Entrepreneurship & Innovation June 2025 – July 2025

• Leading in UConn's I-Corps innovation cohort focused on translating academic research into market-ready products.

• Representing team "LitheVision" in applying AI to industrial error detection, customer discovery, and product planning.

Projects

Credit Card Fraud Detection using Balanced Random Forest Apr 2025

• Implemented Balanced Random Forest (BRF) to detect fraud in a highly imbalanced real-world dataset.

• Evaluated model with F1-score, G-Mean, and Weighted Accuracy, benchmarking against state-of-the-art methods.

Personal Portfolio Website – https://haileyannreed.github.io/portfolio/ Mar 2025

• Curated and deployed a personal site showcasing projects in AI, ML, computer vision, and quantitative finance.

Technical Skills

• **Languages**: Python, C, SQL, Haskell, HTML, JavaScript, CSS.

• **Frameworks/Libraries**: PyTorch, TensorFlow, Scikit-Learn, NumPy, Pandas, Matplotlib, NetworkX.

• **Tools**: Git, FRED API, HPC (UConn), HuggingFace, LaTeX (Overleaf), Excel.

• **AI/ML**: Linear & Logistic Regression, SVMs, Optimization Techniques, Model & Feature Selection, Regularization, Decision Trees, Dimensionality Reduction (PCA), Neural Networks, Performance Evaluation, Clustering (K-means).

• **Quantitative Modeling & Time Series Forecasting**: ARIMA, Exponential Smoothing, RNN, LSTM, GRU, Transformer, Feature Engineering, Stationary Analysis.

• **Machine Learning – Computer Vision**: U-Net, Stable Diffusion, Siamese & Semi-Siamese Networks, Few-Shot Learning, Data Augmentation.

Work Experience

BEACH (Belonging, Engagement, Affinity Computer Hangout) Lifeguard Aug 2024 - Present

UConn School of Computing, Storrs, CT

• Tutoring undergraduate students in computer science fundamentals.

• Organizing faculty-student engagement events.