Yasmine Subbagh

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EDUCATION

University of Washington – *Bothell, WA*

Master of Science in Computer Science and Software Engineering	2024 – (Expected) 2026
Cumulative GPA: 3.74/4.0	
Bachelor of Science in Computer Science and Software Engineering	2020 - 2024
Cumulative GPA: 3.67/4.0	

WORK EXPERIENCE

Software Engineer Intern – Stoke Space - *Kent, WA*   9/25 – 12/25

Research Assistant (Full Stack iOS Engineer) – UWB IDEA Lab - *Bothell, WA*   3/24 – 1/25
- Led the end-to-end design and prototyping of an iOS communication app in Swift for non-verbal children that require speech assistance.
- Lead user requirement gathering with PMs and Speech Pathologists to design the back-end SQLite database to support personalized communication workflows for various use-cases.

Software Engineer Intern – OneRadio Corporation - *Seattle, WA*   6/24 – 9/24
- Led the research and evaluation process to select a secure remote development solution for collaborative code access. Established criteria around security, speed, cost, and accessibility.
- Led the migration of 3 primary codebases to secure, cloud-based version control on AWS, improving development workflow for 5 engineers working with the codebase.
- Designed and implemented an LSTM based AI model to predict radio wave behavior.

Software Engineer Intern – OneRadio Corporation - *Seattle, WA*   6/23 – 9/23
- Performed and documented black box testing to validate system functionality and support reliable software delivery.
- Debugged and maintained critical legacy code in C, contributing to stability and performance improvements.

PROJECTS

Image Deep Learning | Demo |
- Designed, implemented, and trained a convolutional neural network in MATLAB to correctly classify American Sign Language (ASL) MNIST image data.
- Improved model accuracy by 61% through data preprocessing and hyperparameter tuning, earning 2nd place in a Kaggle competition.

AI Wild Fungi Identifier | Demo |
- Developed a classifier for wild mushroom edibility with 99.98% accuracy using a backpropagated multi-layer perceptron implemented from scratch in NumPy, trained on 69,000+ samples.
- Engineered features from two datasets and applied principal component analysis (PCA) and random forest feature importance rankings to validate data separability and ensure high-quality model input.
- Implemented a full ML pipeline in Python, including data preprocessing, analysis, training, and evaluation, focused on preventing overfitting and ensuring model reliability.

IoT Full Stack Water Tank Monitor | Demo |
- Designed and built an end-to-end IoT system to solve a real personal problem: tracking rainwater levels in outdoor storage tanks to reduce household utility costs.
- Built a scalable AWS pipeline: IoT Core for message ingestion, DynamoDB for storage, and Lambda/API Gateway to expose RESTful endpoints.
- Developed a responsive Flask web app hosted on EC2 for real-time data visualization and user management, with automated threshold-based alerts via email.

AI Vehicle Detection in Traffic Scenes
- Fine-tuned a Mask RCNN with Stanford Cars and COCO subset dataset to detect and segment vehicles in traffic scenes.
- Evaluated performance, inference speed, and application suitability by comparing the 2-stage model to a 1-stage models and a hybrid ensemble (Faster R-CNN + YOLOv5), analyzing mAP and resource trade-offs across scenarios such as real-time inference vs. high-precision annotation.

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68K Inverse Assembler | Demo |
- Built a command-line assembly disassembler in Motorola 680000 Assembly translating binary machine code into human-readable assembly instructions with support for advanced opcode parsing.

Svelte Personal Portfolio | Demo |
- Designed and developed a responsive personal portfolio website using Svelte and Tailwind CSS**,** showcasing projects, skills, and professional experience.
- Deployed the site for public access, optimizing for readability and accessibility, ensuring functionality on both web and mobile.

NBA Stats Full Stack Web App
- Designed and implemented a PostgreSQL schema tailored to the needs of NBA fans, supporting flexible stat queries and filtering.
- Integrated official NBA data via RESTful APIs, handling ingestion, normalization, and scheduled updates.
- Built a Node.js application to utilize the database, enabling users to search and explore stats through an interactive UI.

TECHNICAL SKILLS

Coding Languages: C, C++, Java, Python, Bash, Swift, SQL, JavaScript, TypeScriptJS, HTML, Motorola 68000 Assembly, ARM Assembly, MATLAB, JSON, LaTeX.

Tools: AWS (EC2, S3, EBS, ECS, DynamoDB, Lambda, IoT Core, API Gateway, Fargate, IAM), Azure (App Services, Function App, Storage Accounts, Virtual Machines, Stream Analytics Jobs, Cosmos DB, SQL Databases), Git, Docker, RESTful APIs, MySQL, PostgreSQL, Vercel, Qualtrics, Figma, Visual Studio Code, ArcGIS Pro.

Libraries: TensorFlow, PyTorch, Keras, Pandas, NumPy, sklearn, NLTK, Seaborn, Requests, Svelte, Flask, React, Next.js CSS, Bootstrap.