Edom Yared Belayneh

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EDUCATION

Central Michigan University, Mount Pleasant, MI — August 2022 - May 2026
Bachelor of Science in Computer Science & Honors Student — GPA: **3.97/4.0**

PUBLICATIONS

Belayneh, E., Chen, X., Nadam, R. et al**. Impact of Reynolds number and slip/no-slip boundary condition on stratification in a two-dimensional Boussinesq system**. *Computational and Applied Mathematics*. 45, 181 (2026).
DOI: 10.1007/s40314-025-03577-1

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C/C++, Swift , SQL
- **Frameworks & Libraries:** PyTorch, TensorFlow, OpenCV, NumPy, Pandas, Streamlit
- **Development Tools:** Git, Jenkins (CI/CD), Docker, Firebase, Pinecone, Vercel
- **Edge & Systems:** Linux, Snapdragon NPU, on-device inference, Apache, PM2
- **Machine Learning:** CNN, Physics-Informed Neural Networks(PINN), DeepONets, model evaluation, augmentation

TECHNICAL EXPERIENCE

QUALCOMM, San Diego, CA — May 2025 – August 2025
Software Engineer Intern

- Implemented a Next.js dashboard that cut debugging time by 60% and centralized sweep data, images, and patches into one interface, boosting cross-team efficiency by 45%.
- Integrated real-time IQ metric access via a Linux-based Apache server, with PM2 runtime, enhancing data retrieval speed by 50% and improving system responsiveness.
- Automated Jenkins pipelines to trigger standalone offline data transport flows upon report generation, streamlining CI/CD processes and reducing manual intervention by 40%.
- Developed a Python script using OpenCV to automatically detect MCC charts for image delta analysis, replacing manual identification and speeding up camera tuning evaluations.

HEADSTARTER AI, Mount Pleasant, MI — July 2024 – February 2025
Software Engineer Fellow

- Built 5+ AI apps and APIs with 98% accuracy, engaging 1,000 users, using NextJS, OpenAI, Pinecone, and StripeAPI.
- Led 3 fellows in MVC projects, resulting in a 100% increase in project completion rate; coached by Amazon, Bloomberg, and CapitalOne engineers on Agile, CI/CD, Git, and microservices.

NATIONAL SCIENCE FOUNDATION - CMU, Mount Pleasant, MI — May 2024 – August 2024
Research Assistant (Machine Learning & Computational Physics)

- Developed Python algorithms to solve incompressible Navier-Stokes equations for buoyancy-driven fluids.
- Engineered programs that simulate Physics-Informed Neural Networks and Physics-Informed DeepONets for Boussinesq and Navier-Stokes Equations, reducing computational time by 23.4% compared to traditional methods.
- Conducted systematic experiments analyzing Reynolds number effects and boundary condition constraints, contributing to a peer-reviewed publication in Computational and Applied Mathematics (2026).

PROJECTS — Github Profile

Qlippy – On-Device AI Desktop Application - *Utilized Node.Js and React in VS Code* | *Github Link* — June 2025

- Developed a desktop AI productivity app with Next.js + TypeScript frontend and Flask + SQLite backend, enabling offline file management, app launching, and document retrieval.
- Engineered local-first architecture fully deployed on Snapdragon X Elite chips, leveraging SQLite for persistence and ensuring 100% offline functionality.
- Collaborated on a team of 4 to deliver an NPU-accelerated AI assistant GUI, contributing primarily to frontend/backend development while integrating with AI models running directly on-device.

Brain Tumor Classification – Machine Learning – *Utilized Python in Streamlit* | *Github Link* — November 2024

- Designed and trained a CNN-based medical image classifier on labeled brain MRI scans, achieving 92% accuracy on tumor vs. non-tumor classification.
- Implemented image preprocessing and data augmentation pipelines (resizing, normalization, augmentation) to reduce overfitting and improve generalization, resulting in a 15% performance lift on unseen data.
- Tuned model hyperparameters and evaluated performance using accuracy, precision, recall, and F1-score accrpss validation data to validate clinical reliability.

STUDENT ORGANIZATIONS & LEADERSHIP EXPERIENCE

Women In Technology (WIT), Vice President | **CodePath,** Member | **ColorStack,** Fellow | **Rewriting The Code,** Member