

Alex Picard

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<https://www.linkedin.com/in/alexpica0/> | <https://github.com/Alexm-picard> | <https://alexpica0.info>

EDUCATION

Boston University | MS in Software Development | 2025-2027

University of Maine | BS in Computer Engineering, Minor: Computer Science | 2021 - 2025

TECHNICAL SKILLS

Languages: Python, TypeScript, C/C++, Java, JavaScript

Tools/Cloud: Docker, AWS, React, Flask, Node.js, PyTorch, TensorFlow, Git

Databases: NoSQL, Redis, SQLite

WORK EXPERIENCE

ML Data Associate II | Amazon

July 2025 - Present

- Engineer high-quality training datasets for LLMs by labeling and evaluating multimodal data (text, speech, audio, image, video) across classification, ranking, and adversarial testing tasks, maintaining 100% quality score while processing [X thousand] samples since [MONTH]
- Pilot test annotation workflows and UI tools pre-production, providing UX feedback to improve interface design, annotator productivity, and global deployment success

ML Research Assistant | Advanced Structures and Composite Center

May 2023 - September 2024

- Refactored over 3,000 lines of MATLAB code into modular Python components, enabling integration into an active learning pipeline for composite material simulation workflows
- Designed a multi-fidelity active learning system combining PINNs and feedforward neural networks in PyTorch to model composite materials, leveraging low-fidelity analytical models to reduce simulation computational cost
- Led technical design and integration of neural network architecture within a 10-member interdisciplinary team, delivering quarterly milestones using Agile methodology.

PROJECTS

Multi-Fidelity Physics Informed Neural Network (MF-PINN)

April 2025 - May 2025

- Developed dual-network PINN architecture in PyTorch, integrating low-fidelity analytical models and high-fidelity experimental data to predict concrete compressive strength, using physics-informed constraints to balance computational efficiency with accuracy
- Implemented composite loss function combining physics residuals, low-fidelity data loss, and high-fidelity correction loss with LeakyReLU activation and dropout regularization, demonstrating proof-of-concept for multi-fidelity machine learning approaches

Financial Planner Web Application | <https://farhan-financial-planner.web.app/> **January 2025 - May 2025**

- Built a full-stack financial planning web application using React, TypeScript, and Firebase with Google authentication, featuring automated recurring payment scheduling, budget forecasting, and Excel/CSV data import for student financial management
- Implemented CI/CD pipeline with automated testing in a 6-person team using GitHub Issues and pull requests to manage sprint deliverables and maintain code quality

To-Do Webpage (Cloud) | LINK HERE FOR AWS EC2

April 2025 - May 2025

- Architected and deployed a distributed microservices application using Docker Compose with 4 Flask-based services, Redis for persistent state management with service-specific key namespacing, and Nginx reverse proxy configured for endpoint-based routing and load balancing
- Implemented RESTful APIs with Docker DNS-based service discovery, deployed on Jetstream2 cloud infrastructure, and migrated to AWS EC2 for industry-standard deployment practices