# Alex Picard

Brookline, MA · (207) 551-5430 · am.picard03@gmail.com
https://www.linkedin.com/in/alexpicard0/ | https://github.com/Alexm-picard | https://alexpicard.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, Express, Flask, Node.js, PyTorch, TensorFlow, Git

**Databases:** NoSQL, Redis, SQLite, MongoDB

## 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 a 100% quality score while processing over two thousand samples since October 15.
- Pilot test annotation workflows and UI tools pre-production, providing UI/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 Application | https://financial-planner.alexpicard.info** **January 2025 - December 2025**

- Built a full-stack financial planning web application using React, TypeScript, Node.js/Express, and MongoDB with Auth0 authentication, featuring savings/debt tracking, automated payment scheduling, and transaction history for personal financial management.
- Collaborated in a 6-person team using GitHub Issues and pull requests to manage sprint deliverables, coordinate feature development, and conduct code reviews.

**To-Do Webpage (Cloud) | https://todo.alexpicard.info** **April 2025 - May 2025**

- Architected and deployed a distributed microservices application using Docker Compose with 4 Flask-based services, 3 isolated Redis instances for data persistence, and Nginx reverse proxy for centralized routing and traffic management across services.
- Implemented RESTful APIs with inter-service communication using Docker's internal DNS resolution and deployed on AWS EC2 for production-grade hosting with industry-standard cloud deployment practices.