

Mani Pourfazli

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EDUCATION

The University of North Carolina at Chapel Hill

Chapel Hill, NC

B.S. in Computer Science

Dec 2026

- o **GPA:** 3.64/4.0, *Dean's List*
- o **Related Coursework:** Intro to Software Engineering, Data Structures and Analysis, System Fundamentals, Computational Photography (Fall 2025), Modern Web Programming (Fall 2025), Models of Language and Composition (Fall 2025), Foundations of Programming, Linear Algebra, Intro to Probability (Fall 2025)

SKILLS

Languages: Python, Java, HTML/CSS, Angular, Javascript, SQL, Typescript, MatLab, PHP

Developer Tools: Git, VSCode, Jupyter Notebooks, Maven, Kubernetes, OKD, Docker

Libraries/Frameworks: Angular, JavaFX, FastAPI, Pydantic, Pandas, Scikit-learn, BeautifulSoup, React, Node.js, Pytorch, Numpy

RELEVANT EXPERIENCE

Omicsify LLC

Bioinformatics Intern | Python, PHP, HTML/CSS

Aug 2024 – Oct 2024

- Analyzed **1M+ DNA sequences** in Python to detect motifs and genetic variations linked to disease markers.
- Built and documented **bioinformatics pipelines** with Python for large-scale genomic preprocessing.
- Supported disease research by improving detection of **genetic variation patterns** that help identify potential biomarkers.
- Developed a **web interface (PHP/HTML/CSS)** to visualize DNA analysis results, creating **10+ plots** to present sequence patterns and variation findings.
- Validated workflows across **Linux, macOS, and Windows** to ensure reproducibility and scalability.

PROJECTS

XLChat - UNC CS Website | [Source code](#) | [Website](#) | Angular, TypeScript, HTML/CSS, Python, JavaScript

Mar 2025 - May 2025

- Engineered an AI-driven chat feature using OpenAI API, supporting **2000+ CS students** in course Q&A and topic exploration.
- Built and integrated full-stack components with Angular (frontend) and Python FastAPI (backend), processing **API calls**.
- Designed SQL database schema managing **500+ stored questions** with dynamic topic handling.
- Deployed via Kubernetes and OKD clusters on UNC servers, maintaining **99% uptime** in production testing.

MIT Intro to Deep Learning (Course) | Python, PyTorch, NumPy, Jupyter Notebooks

Jun 2025 - Aug 2025

- Completed MIT's Intro to Deep Learning (2025), a high-intensity program covering fundamentals of **deep learning, NLP, computer vision, generative modeling, and large language models**, with hands-on labs and a final project.
- Built an **LSTM RNN for music generation**, training on **1,000+ Irish folk songs** (83-character vocabulary), generating **1,000+ playable sequences** in ABC/WAV formats.
- Designed a **CNN + Debiasing VAE** on **200K+ CelebA images**, reducing demographic accuracy gaps by **15–25%** through **adaptive resampling and latent-space analysis**.
- Fine-tuned a **2B-parameter Google Gemma LLM** with **LoRA**, cutting trainable parameters by **99% (~20M)** and achieving **73% Yoda-style text consistency** with automated evaluation pipelines.

Laliga Match Predictor | [Source code](#) | Python, pandas, BeautifulSoup

Jun 2024 - Aug 2024

- Scraped and cleaned **8 years of LaLiga match data (2016–2024)** covering **20 teams** and **3,800+ matches**, collecting hundreds of structured data points (scores, outcomes, goals).
- Engineered predictive features and trained ML models (**Random Forest, Logistic Regression, Gradient Boosting**) to classify match outcomes.
- Achieved **55% accuracy** on test data through **k-fold cross-validation** and hyperparameter tuning.
- Addressed real-world preprocessing challenges, including **missing values, categorical encoding**, and class imbalance in win/draw/loss labels.

Akari | [Source code](#) | Java

Nov 2024 - Jan 2025

- Developed a complete **GUI puzzle game** using **Java** and **JavaFX** with **MVC** architecture, supporting **5+ puzzles** and dynamic board sizes
- Implemented complex game logic algorithms for lamp placement validation, lighting calculations, and puzzle completion detection across 2D grids
- Built a responsive UI with **real-time visual feedback**, puzzle navigation controls, and **observer pattern** for seamless model-view synchronization
- Utilized **Maven** for build management and followed industry best practices for code organization and dependency management