Mani Pourfazli

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EDUCATION

UNC Chapel Hill **Chapel Hill, NC**

B.S. in Computer Science *Expected Graduation, May 2027*

- **GPA:** 3.64/4.0, *Dean's List*
- **Related Coursework:** Intro to Software Engineering, System Fundamentals, Foundations of Programming, Data Structures and Analysis, Discrete Math, Linear Algebra

EXPERIENCE

Omicsify LLC **Cary, NC**

Bioinformatics Intern *Aug 2024 – Oct 2024*

- Contributed to the development, enhancement, and documentation of bioinformatics pipelines.
- Collaborated with industry professionals to test and **refine software solutions** tailored to bioinformatics needs.
- Assisted in **web platform improvements**, focusing on functionality and user experience.
- Gained hands-on experience in **bioinformatics software development** and **pipeline creation**.
- Demonstrated strong independent work ethic and effective teamwork within a dynamic, remote environment.

PROJECTS

Movie Recommendation System | Source code **Python, scikit-learn, pandas**

- Engineered a **hybrid recommendation system** combining content-based and collaborative filtering
- Implemented **TF-IDF vectorization** for movie title similarity search
- Developed user-based collaborative filtering algorithm for personalized recommendations
- Created interactive interface using Jupyter widgets for **real-time recommendations**
- Built on MovieLens **25M dataset** with **62,000+ movies** and **25M+ ratings**

AI Feature (XLChat) - UNC CS Website | Source code **Angular, TypeScript, HTML/CSS, Python, Javascript**

- Engineered an AI-driven chat feature using **OpenAI API** to enhance student engagement and course topic support.
- Built and integrated full-stack components with **Angular**, **TypeScript**, **HTML/CSS** (frontend) and **Python** (FastAPI, Pydantic) backend services.
- Designed and managed **SQL database entities** to support dynamic topic and question handling.
- Deployed application using **Kubernetes** and **OKD clusters** on UNC infrastructure for scalable, production-grade performance.

Laliga Match Predictor | Source code **Python, pandas, BeautifulSoup**

- Scraped and cleaned historical LaLiga match data using **BeautifulSoup**, collecting over **100s** of data points.
- Engineered predictive features and trained **machine learning models** (Random Forest, Logistic Regression, Gradient Boosting) to predict match outcomes.
- Achieved **55% accuracy** on test data by implementing **cross-validation** and **hyperparameter tuning.**
- Addressed data preprocessing challenges, including missing values and imbalanced datasets.

Akari | Source code **Java**

- 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 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

SKILLS

Languages: Python, Java, HTML/CSS, Angular, Javascript, SQL, Typescript
Developer Tools: Git, VSCode, Jupyter Notebooks, Maven, Kubernetes, OKD, Docker
Libraries/Frameworks: Angular, JavaFX, FastAPI, Pydantic, Pandas, Scikit-learn, BeautifulSoup