Tyler Rafferty

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EDUCATION

University of Massachusetts Amherst — Amherst, MA
Bachelor of Science in Computer Science, Minor in Mathematics — *Sept. 2024 – Expected May 2027*
GPA: 3.772 / 4.0
Honors & Activities: MassAI Club, HackUMass 2024, Dean's List (Fall 2024 & Spring 2025)
Relevant Coursework: Algorithms, Database Management, Introduction to Computation, Linear Algebra, Programming Methodology

University of Massachusetts Lowell — Lowell, MA
Bachelor of Science in Computer Science — *Sept. 2023 – May 2024*
GPA: 4.0 / 4.0
Honors & Activities: Chancellor's List (Fall 2023 & Spring 2024), Honors Student, Cyber Security Club Treasurer, Collegiate Cyber Defense Team

EXPERIENCE

Software Quality Engineer Intern — June 2025 – August 2025
Federal Reserve Bank of Boston — *Boston, MA*
- Developed and deployed a full-stack feature (Next.js + Spring Boot) for a testing tool used by 100+ financial institutions, enabling randomized input fields that enhanced partner testing depth and reliability
- Engineered unit and integration test suites (Jest, JUnit) to validate new functionality, increasing coverage for the feature and improving system confidence in production
- Collaborated with product owners and senior engineers in a distributed agile environment, refining requirements and delivering functionality aligned with FedNow's large-scale testing strategy

Full-Stack Software Engineer — April 2025 – Current
UMass Work Force Management — *Amherst, MA*
- Contributing to a project led by a graduate student in partnership with UMass Dining to build a scheduling platform for dining hall staff
- Developing full-stack features in React, Go, and SQL, including shift management and access control
- Applying Agile methods with Jira, CI/CD, and Git to ship and maintain reliable code

Cybersecurity Intern — June 2024 – August 2024
South Shore Hospital — *South Weymouth, MA*
- Engaged in security operations using enterprise tools and industry-standard frameworks, applying concepts through formal and hands-on training opportunities
- Played a crucial part in restoring South Shore Hospital during the 2024 CrowdStrike outage

PROJECTS

PhotoCapsule | *Next.js, Golang, PostgreSQL* https://github.com/Tyler-Rafferty2/PhotoCapsule
- Designed and built a full-stack web application for creating secure photo time capsules using Next.js, Tailwind CSS, Go, and PostgreSQL
- Implemented user authentication with JWT and built RESTful APIs to support image uploads, capsule creation, and a soft-delete trash system
- Containerized the application with Docker, configured a scalable backend architecture using GORM ORM and secure cloud storage practices, and implemented CI/CD pipelines with GitHub Actions to automate testing, building, and deployment

UHitch | *React, Express, Node, MongoDB* https://github.com/Tyler-Rafferty2/UHitch
- Collaborated with a team during HackUMass to design and build a full-stack ridesharing web app using the MERN stack
- Developed a web platform to connect college students for ride-sharing to and from campus, focusing on usability and efficiency during the 36-hour competition
- Contributed to both frontend and backend development, implementing features such as user authentication, ride search, and booking functionality

2048 AI | *Python, PyTorch* https://github.com/Tyler-Rafferty2/2048AI
- Developed a reinforcement learning agent using Deep Q-Learning to play the game 2048, optimizing decision-making through experience replay and neural networks
- Designed and fine-tuned reward functions to enhance strategic tile merging, leading to improved game performance and higher tile scores

TECHNICAL SKILLS

Languages: JavaScript, Golang, Python, Java, HTML, CSS, SQL, NoSQL
Frameworks & Libraries: React, Node.js, Express, Spring Boot
Cloud & Tools: AWS (EC2), MongoDB Atlas, Docker, CI/CD, Git, GitHub, LaTeX, Nginx, Figma, Linux
Concepts & Skills: RESTful API development, Microservices, Agile Development