Nicole Kaldus

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Personal Statement

I am an Accelerated Computer Science Masters student at the University of Massachusetts Amherst with a focus on robotics software engineering, and AI/ML. I am passionate about applying AI/ML to drive innovation in automation and advanced systems for industries such as US defense, firmware, and enterprise technology. I am eager to contribute my knowledge to complex and large-scale challenges.

Relevant Skills & Coursework

- **Skills:** Python, C#, Java, TypeScript, AWS, Numpy, Jupyter, Datadog, GitHub, Microprocessors and Sensors
- **CS Courses:** Neural Networks, Quantum Informatics, Ubiquitous Computing, Machine Learning, Algorithms
- **Math Courses:** Multivariate Calculus, Linear Algebra, Discrete Math, Probability & Statistics

Experience

ZocDoc Auth SWE Intern | *C#, AWS, Auth0, Swagger* Summer 2024

- Fully automated internal service authentication from legacy code to a more secure and efficient structure, reducing manual effort
- Designed and implemented a Batch API used by an AWS lambda to generate customized Auth0 tenant client with a public/private key pair and necessary credentials
- Moved JWT creation and access token for authentication out of legacy codebase

Liberty Mutual Observability SWE Intern | *TypeScript, DataDog, GitHub* Summer 2023

- Added tags to ICMP tests and corresponding hosts to efficiently create monitor down times to reduce false failure alerts and reduce tagging gaps
- Reduced company spending by revamping and debugging legacy code used to alert engineers of code money pits
- Created automatic MS Teams alerts for scheduled tasks to improve visibility of statistics and failures

AI Undergraduate Course Assistant | *Python* Fall 2024

- Holding weekly office hours, offering personalized tutoring to students to support deep understanding in material and applications
- Grading homework and exams while providing detailed feedback

Projects

Hand-Gesture Controlled Drone | *C, Python, ESP32-S3, MPU6050* Spring 2024

- Created both wired and Bluetooth communication between microprocessor and drone for greater versatility
- With teammates, developed two 1-D CNNs, each with over 99% accuracy on test data and around 75-80% accuracy in practice

Image Classifier Neural Net | *Python, Jupyter, Numpy* Fall 2024

- Labels different images in the CIFAR-10 dataset using KNN and a two layer Neural Network as classification strategies
- Calculates loss using the softmax and SVM functions to improve accuracy of results and adjust during training

Pac-Man Reinforcement Learning AI | *Python* Fall 2023

- Compares a series of RL algorithms from value iteration to approximate Q-Learning
- Pac-Man wins at a rate of over 90%

Education

University of Massachusetts - Amherst Amherst, MA
Masters of Science in Computer Science *Jan. 2024 – Dec. 2025*
GPA: 4.0

University of Massachusetts - Amherst Amherst, MA
Bachelor of Science in Computer Science *Aug. 2021 – Dec. 2024*
GPA: 4.0
Awards: Dean's List Fall 2021-present, Chancellor's Scholarship