Andrew Festa

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Languages and Frameworks

Languages: Python, C#, C++, Java, SQL, NoSQL, Arduino, Matlab
Frameworks: GIT, PyTorch, SciPy, OpenCV, CUDA, AWS, Tensorflow, React, Azure

Experience

Oregon State University **Corvallis, OR**
Graduate Research Assistant *Jun. 2022 - Sep. 2023*

- Authored a detailed literature review on multiagent temporal abstractions over extended time horizons, identifying three promising research directions to advance the field
- Designed a framework for learning inter-agent dependencies that arise due to environmental dynamics
- Published papers achieving 35% faster learning with 10% improved performance over asymmetric island models

Graduate Teaching Assistant *Sep. 2021 - Jun. 2022*

- Led teaching sections on architectural design of software with a focus on clean and maintainable code
- Formulated teaching plans for algorithm design and analysis, mobile and web development, and data structures
- Automated grading and feedback for algorithm implementations in multiple programming languages that reduced workload by over 85%

IOMAXIS, LLC **Springfield, VA**
Artificial Intelligence Research Engineer *Sep. 2019 - Aug. 2021*

- Implemented a multi-agent reinforcement learner to automate search and rescue efforts by autonomous drones that self-learned how to fly and navigate in a simulated real-world crisis area using AirSim
- Organized creation of a project to reduce overhead with identifying and pursuing new project proposals
- Designed a GUI for detection and analysis of zero-day attacks and anomalous system behavior

Artificial Intelligence Research Co-op *May 2018 - Sep. 2019*

- Designed and implemented a network intrusion management system able to cordon off intrusions on a live network in less than 8 seconds
- Developed AI-based approach using YOLOv3 for landmark recognition from phone images that achieved 98% using top-3 classification
- Performed and presented comparison tests of different machine learning models and cleaning methods to inform contract proposals

UTC Aerospace Systems **Raleigh, NC**
Software Engineer Co-op *Jan. 2017 - Aug. 2017*

- Led efforts in developing test harness for verifying and validating code functionality on target systems to comply with DO-178C
- Cleaned and analyzed messy sensor data that fed into systems used for detection of aircraft fires
- Automated generating metric reports detailing code completion to present to customers

Sophos **Burlington, MA**
Security Engineer Co-op *Jun. 2016 - Aug. 2016*

- Automated the discovery of external OSINT assets, including available employee information, domains, and IP ranges
- Leveraged Java and Burps Suite to automate vulnerabilities assessment in front- and web-facing internal assets
- Uncovered and validated potential threat vectors prior to exploit and aided in remediation of findings

Projects

Publications

- Reinforcing Inter-Class Dependencies in the Asymmetric Island Model (GECCO '24, Best paper nomination)
- Influence-Focused Asymmetric Island Model (AAMAS '24, Extended abstract)
- Data Representation for Motor Imagery Classification

Distributed Optimization of Asymmetric Actors in Video Games

- Leverage existing simulation software to jointly optimize agent characteristics with no explicit gradients
- Developed a grammar for representing agent policies with no direct access to environment state
- Discovered unknown optimal solutions in the framework of the existing simulator able to inform player actions

Brain-Controlled Interface Headset

- Designed iterative implementations for a headset to gather reliable electroencephalogram signals from the scalp
- Incorporates notch filters and cable shielding to reduce signal noise
- Allows for impedance checking to measure reliability of gathered signal

Education

Oregon State University **GPA: 3.57**
Master of Science: Robotics *Sep. 2021 - Sep. 2023*

Rochester Institute of Technology **GPA: 3.6**
Master of Science: Computer Science *Aug. 2018 - May 2020*

Rochester Institute of Technology **GPA: 3.63**
Bachelor of Science: Computer Science and Electrical Engineering *Aug. 2015 - May 2020*