

Angel Sylvester

📍 Minneapolis, MN ✉ sylve057@umn.edu 📞 +612 200 6907 🔗 angel-sylvester.com **in** angel-sylvester
 🌐 angsylvest

Summary

5th-year PhD candidate specializing in AI/Robotics at the University of Minnesota with over 5 years of combined research and industry expertise in AI model development. Currently advancing a thesis centered on enhancing explainability through innovative applications of social learning and adaptive techniques in multi-agent systems.

Education

- Ph.D University of Minnesota**, Computer Science (AI/Robotics) Sept. 2020 to present
- **Coursework:** Robotics, Advanced Alg and Data Structures, VR and 3D Interaction
- BS Macalester College**, Computer Science and Chemistry Sept. 2016 to May 2020
- **Coursework:** Multi-variable Calculus III, Theory of Computation, Discrete Mathematics, Linear Algebra, Bodies/Minds: AI Robotics, Intro to Artificial Intelligence.

Experience

- Honeywell**, Graduate AI/ML Intern MN, USA
June 2024 to Aug. 2024
3 months
- Applied Generative AI techniques as part of the MagGPT project to enhance Magnetic Anomaly Navigation accuracy under multiple environmental conditions.
 - Conducted comprehensive literature reviews and developed methods to fine-tune low-resolution magnetic anomaly data, ensuring high accuracy levels.
 - Collaborated with a multidisciplinary team to address deployment challenges and optimize technology solutions.
- University of Minnesota**, Graduate Researcher MN, USA
Sept. 2020 to present
3 years 11 months
- Investigated the usage of embodied evolution and bayesian principles to aid to development of online adaptable controllers in multi-robot systems.
 - Investigated ways to exploit communication and social learning mechanisms to aid in coordination between multiple robots.
 - Mentored students ranging from high school level to masters students to development of independent research projects.
- University of Minnesota**, Graduate Teaching Assistant MN, USA
Sept. 2020 to present
3 years 11 months
- Managed and supervised a team of 30 undergraduate students, ensuring smooth coordination of responsibilities.
 - Acted as a liaison for undergraduate students, providing support and guidance on coursework and addressing general inquiries.
- University of Minnesota**, Graduate Teaching Instruction MM, USA
Jan 2022 to May. 2022
5 months
- Led instruction for an undergraduate class of approximately 30 students in the introductory Python course, CSCI 1133.
 - Coordinated and facilitated one-on-one sessions between students and provided support to teaching assistants, ensuring effective resolution of semester-long issues.

Publications

An empirical characterization of ODE models of swarm behaviors in common foraging scenarios

2023

John Harwell, *Angel Sylvester*, Maria Gini

[0.1007/s10514-023-10121-9](https://arxiv.org/abs/0.1007/s10514-023-10121-9) 

Projects

Online Adaptation for Multi-robot Systems

2024

- As part of thesis project, developed multi-robot environment to assess performance as online adaptations are made during foraging task.
- Used python.

Sequential Social Dilemmas in multi-agent reinforcement learning

2024

- Investigated Bayesian-based intuition in reward shaping to guide emergence of social consciousness when addressing sequential social dilemmas. PPO algorithm implemented from scratch.
- Used Python.

Multi-user Interface in VR

2020

- Using Babylon.js and Matrix, developed message-passing system to aid in synchronization of multi-user environments.
- Used Node.js, javascript, typescript.

Technologies

Languages: Java, Python, C, C++, R, SQL, XML/XSL, \LaTeX , Html, css, JavaScript, Typescript

Software: Ionic, Netlogo, ARGoS, Webots, Babylon.js, ROS

High-performance Computing (HPC): SLURM, conda, Docker

Machine Learning: tensorflow, pytorch, keras, scikit-learn