

Angel Sylvester

Curriculum Vitae

Contact:

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EXPERIENCE

University of Minnesota, Minneapolis — *Graduate Researcher*

SEPT 2020 - PRESENT

Explored biological/chemical-inspired implementations of swarm-based foraging scenarios from a theoretical and simulation-based perspective

SEISMIC, Minneapolis — *Data Analyst Fellow*

MAY 2021 - PRESENT

Collaborated with other SEISMIC institutions to implement a hierarchical linear model to determine the relationship between demographic factors (ie. first generation status, URM, gender) and performance

University of Minnesota, Minneapolis — *CSCI 1133 Instructor*

JAN 2022 - MAY 2022

Instructor for CSCI 1133 (Introduction to Computing and Programming Concepts) for a class for ~40 students. Developed coursework, lecture plans, and oversaw weekly labs alongside TA's

Macalester College, St. Paul — *Summer Researcher*

MAY 2019 - AUG 2019

Implemented two convolutional neural networks (with ultimate validation accuracy of 95% and 97% respectively) and optimized Monte Carlo localization-based code base to facilitate indoor robot localization and navigation

EDUCATION

University of Minnesota, Minneapolis — *PhD*

SEPT 2020 - PRESENT

Ph.D candidate in Artificial Intelligence/Robotics

Advisor: Maria Gini

Macalester College, St. Paul — *B.A*

SEPT 2016 - MAY 2020

Chemistry and Computer Science (with honors) double major

PROGRAMMING LANGUAGES

Machine Learning:
tensorflow, keras,
scikit-learn.

Programming Languages:
Python, Java, C, Typescript,
HTML, CSS

Frameworks: ROS, Babylon.js,
Ionic, Netlogo, ArGoS, Webots

Databases: Firebase, SQL

OS: Linux, Windows, Mac

AWARDS

ADC Fellowship

Datafest "Best in Show"

LANGUAGES

English (fluent)

Spanish (intermediate)

Korean (basic)

PROJECTS

Prototyping a Robotics Kit for Middle School Students — ongoing

Created a prototype robot equipped with a raspberry pi-based framework and basic motion and sensing functionalities that are compatible with ROS. Ultimate intent is to make user-friendly manual with guided activity to introduce middle school students to hands-on programming

Designing a Multi-User Interface in Virtual Reality — ongoing

Using Babylon.js and Matrix, a multi-user interface was configured that would encourage multiple users to interact across different Oculus headsets

MacStudyAway—

Coordinated with Macalester Center for Study Away to create a UX-friendly, tinder-inspired interface for study abroad program recommendations with a forum/timeline feature

ADDITIONAL EXPERIENCE/VOLUNTEER

University of Minnesota —

Teaching Assistant for CSCI 1133, 1103, and 2980

Summer Computing Camp Instructor (Jun 2022)

Macalester —

Preceptor for COMP123

PUBLICATIONS

1. J. Harwell, A. Sylvester, M. Gini. "Characterizing the Limits of Linear Modeling of Non-linear Swarm Behaviors". In: Autonomous Robots (2022). Under Review. URL: <https://arxiv.org/abs/2110.12307>
2. J. Harwell, A. Sylvester, M. Gini. "A Robust Model for Predicting Collective Behavior in Large Robot Swarms". In: Robotics swarms in the real world, Workshop at ICRA, 2021
3. A. Sylvester. "Exploring the Landscape of Deep Learning". In: Digital Commons Macalester College, 2020. URL: https://digitalcommons.macalester.edu/mathcs_honors/49/