Maria Clare Lusardi

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Education

University of Illinois – *Champaign-Urbana, Illinois* *Aug 2023 – May 2028 (Anticipated)*
PhD in Computer Science
Courses:
CS 597: Advanced Computational Topics in Robotics
CS 473: Algorithms

University of Missouri – *Columbia, Missouri* *Aug 2019 – May 2023*
Bachelor of Science in Computer Science GPA: 4.0

University College Dublin – *Dublin, Ireland* *Jan 2022 – May 2022*
Study Abroad Student in Computer Science
Courses:
CS 47650: Deep Learning
CS 40020: Human Language Technologies
CS 30110: Spatial Information Systems

Projects

Wayfinding Assistant: WayBot Urbana, Illinois
Graduate Student Research Assistant *Jan 2024 – Present*

- Developing a haptic interface as a handle for the Stretch robot platform to discover whether haptic feedback can effectively replace visual and/or auditory feedback for human robot interaction while wayfinding.
- Collaborating with the Human Factors and Aging Laboratory to perform interviews of experts on wayfinding for people with visual impairments.
- Conducting a literature review for a survey paper on robotic solutions to wayfinding for people with visual impairments
- Mentoring two undergraduates through the research process.

Bio-Informatics in Plant Science Columbia, Missouri
Undergraduate Research Fellow *Aug 2020 – May 2021*

- Collaborated with plant science research to developing software to aid in the set-up and analysis of plant-science experiments.
- Presented research at the Undergraduate Research Forum in written, poster, and video formats.

Cybersecurity Research Experience for Undergraduates Fargo, North Dakota
Undergraduate Research Fellow *Jun 2020 – Aug 2020*

- Worked with faculty mentors at North Dakota State University to develop a simulator which would analyze the probability of how many cyber-attacks a computer network would face depending on factors of a pandemic.
- Co-authored a research paper, *Determining the Impact of Cybersecurity Failures During and Attributable to Pandemics and other Emergency Situations,* presented in the 2020 IEEE AIPR conference.

Publications

Ashur, Stav, **Maria Lusardi**, Marta Markowicz, James Motes, Marco Morales, Sariel Har-Peled, and Nancy M. Amato. "SPITE: Simple Polyhedral Intersection Techniques for modified Environments." arXiv preprint arXiv:2407.00259 (2024).

Har-Peled, Sariel, and **Maria C. Lusardi**. "Dependable Spanners via Unreliable Edges." arXiv preprint arXiv:2407.01466 (2024).

Lusardi, Maria Clare, Isaac Dubovoy, and Jeremy Straub. "Determining the Impact of Cybersecurity Failures During and Attributable to Pandemics and Other Emergency Situations." In 2020 IEEE Applied Imagery Pattern Recognition Workshop (AIPR), pp. 1-6. IEEE, 2020.

Skills

Programming Languages (listed by order of proficiency)

Python:	Have known and used extensively in most software projects
C/C++:	Used as the standard programming language for all assignments throughout undergrad, and extensively on most software projects.
Java:	Used in a course on Object Oriented Programming
HTML/CSS:	Used in Web Development classes.
Javascript:	Used in Web Development classes.
PHP:	Used in Web Development classes.

Software: ROS, Git, MATLAB, LaTeX
Robots: Hello Robot Stretch, Universal Robots UR5e manipulator arm

Work

CrowdStrike Minneapolis, Minnesota
Software Engineering Intern *June 2022-Aug 2022*

- Researched methods attackers frequently use to disable or hinder Windows Defender.
- Programmed additional detections logic to provide increased visibility into Windows Defender tampering.

University of Missouri Department of Computer Science Columbia, Missouri
Peer Learning Assistant *Aug 2021-Dec 2021*

- Graded and provided feedback for 45 freshman computer science students in Algorithm, Design, and Programming I.
- Led weekly office hours for students to receive additional one-on-one assistance.
- Assisted with maintaining the shell scripts to allow students to submit assignments efficiently and securely.

Caterpillar Peoria, Illinois
Engineering Intern *May 2021-Aug 2021*

- Created a simulation in MATLAB to generate four kinds of inertial measurement unit (IMU) sensor error, both stochastic and deterministic, on top of existing sensor data.
- Contributed to daily and weekly technical discussions on the work of the autonomy division.

Academic Honors and Awards

College of Engineering High Dean's List *Dec 2019 – May 2023*
Outstanding Award for Abstract Writing *Apr 2021*
Mark Twain Scholarship *Aug 2019 – May 2023*
Datastorm Tech Scholarship *Aug 2021 – May 2022*
Discovery Fellows *Aug 2020 – May 2021*
Lloyd Cardwell Memorial Engineering Scholarship *Aug 2020 – May 2021*

Activities/Leadership

Student Underwater Robotics Foundation*, Co-President* *Apr 2020 – May 2023*

- Collaborated on the software development of an autonomous underwater vehicle (AUV) using ROS, Python and C.
- Submitted technical descriptions of our team's AUV in both paper and video formats for the international RoboSub competition.
- Networked with other underwater robotics teams from around the world during a week-long trip to Washington D.C. for the 2022 RoboSub Competition.

Upsilon Pi Epsilon*, Member* *Oct 2022 - Present*