LIAM JENNINGS

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EDUCATION

Worcester Polytechnic Institute (WPI), Worcester, MA — Expected 2025
Bachelor of Science in Computer Science, GPA: 4.0 / 4.0
Masters of Science in Robotics Engineering, GPA: 4.0 / 4.0

SKILLS

Techniques: C, C#, Java, C++, Python, MATLAB
Software & Technologies: Linux, Embedded Programming, Git, Robot Operating System (ROS)
Languages: Mandarin Chinese (Intermediate)

EXPERIENCE

Backend Computer Security Software Intern, STR, Boston, MA — May 2022 - August 2022

- Developed a diagnostic tool using .NET and C# to introspect into live .NET applications, enhancing diagnostic capabilities.
- Successfully navigated technical challenges to reveal intricate details of internal data structures, including object classifications and memory addresses.
- Created a resourceful tool utilized by team members to aid in the development of other projects.
- Presented the functionalities and benefits of the tool to senior company executives, showcasing the results achieved during the internship.

PROJECTS & ACTIVITIES

Pixel Precipitation: Single Image Deraining with CVAE, WPI — Date

- Collaborated in developing a CVAE model to enhance image clarity by removing rain artifacts.
- Utilized a Lambda GPU server for efficient model training, leveraging a dataset of 861 paired images.
- Implemented a Python script for batch processing of images, utilizing TensorFlow and Keras libraries.
- Engaged in fine-tuning the model through various strategies to improve image reconstruction.

Autonomous Robot Simulation using Deep Q Learning, WPI — Nov 2022 - Dec 2022

- Collaborated with robotics majors to explore reinforcement learning in a simulated environment for an AI class project.
- Utilized ROS's Gazebo simulator and Turtlebot library to simulate a robot maneuvering a cylinder to a random goal.
- Developed a reward system to facilitate the robot's learning process, with penalties for wall collisions.
- Employed a Deep Q reinforcement learning algorithm to control and enhance the robot's performance over time.

Romi Escape Room, WPI — Nov - Dec 2022

- Collaborated on a 3 person team project to build and program 3 Romi robots using various sensing methods.
- Overcame Atmega32U4 board limitations by transitioning higher-level logic to ESP-32 boards.
- Assisted the development of a small RPC library to facilitate communication between the Atmega and ESP-32.
- Achieved bonus objectives including successful mapping and maze escape by two robots.

VEX Pizza Robot, WPI — Oct - Dec 2022

- Collaborated on a team project to build a robot using VEX robotics parts for autonomous 'pizza' (wooden plates) delivery.
- Designed a four-bar mechanism and a conveyor belt gripper for efficient handling of 'pizzas'.
- Implemented a sensor-driven autonomous phase using a state machine with PID controls.
- Led the development process from initial prototyping to final design, conducting static analysis and torque calculations in the development process.

Treasurer - Cyber Security Club, WPI — Sep 2021 - Present

- Oversaw the club's financial management, including budgeting and securing funds from the college administration.
- Engaged in weekly presentations and discussions on an array of topics, enhancing the knowledge base of the club members.
- Collaborated on a phishing awareness campaign to foster cybersecurity mindfulness within the WPI community.
- Contributed to the organization and successful running of the WPICTF competition, a Capture The Flag event that encouraged practical cybersecurity skills.

Treasurer - Computer and Technology Club, WPI — Sep 2021 - Present

Automated Hydroponics System - Personal Project, Seattle, WA — Dec 2020 - June 2021

- Combined electronics, sensors, and a framing structure to build a custom hydroponics growing system

INTERESTS

Reading, Hiking, Baking, Tinkering, Sleeping, Traveling