

WESLEY J. LEWIS

(+1) (252) 665-2081 \diamond wjl4jj@virginia.edu

<https://wesleylewis05.github.io/> \diamond <https://www.linkedin.com/in/wesley-lewis05>

EDUCATION

University of Virginia

B.S. Computer Science

August 2020 - Present

Expected 2024

PUBLICATIONS & PRESENTATIONS

Journal and Conference Publications

SLURP! Spectroscopy of Liquids Using Robot Pre-Touch Sensing

IEEE International Conference on Robotics and Automation (ICRA), 2023

Nathaniel Hanson*, Wesley Lewis*, Kavya Puthuveetil*, Donelle Furline Jr, Akhil Padmanabha, Taskin Padir, Zackory Erickson

doi: 10.1109/icra48891.2023.10161084

Workshops

Community-Driven Environmental Sensing: From Data Acquisition to Visualization

University of Virginia School of Data Science Datapalooza, 2021

Luis Felipe R. Murillo, Teagan Le, Wesley Lewis, Mirella Shaban

RESEARCH EXPERIENCE

Robotics Institute, Carnegie Mellon University

Aug 2022 - Present

Research Assistant, The Robotic Caregiving and Human Interaction Lab

Advisor, Professor Zackory Erickson.

- Continued collaboration with Professor Taskin Padir at Northeastern University on developing new sensing methods for robotic perception and manipulation of liquid and granular media.
- Investigated Generative models (CGAN and SGAN) using TensorFlow Keras for generating synthetic spectral signals for model training.

Engineers for Exploration, University of California San Diego

May. 2022 – Present

Research Assistant, Radio Telemetry Tracker Project

- Assisted in the development of a low-powered drone to conduct radio telemetry tracking missions of wildlife radio collars used for monitoring animal movement patterns.
- Developed firmware for the serial drivers of a low-powered drone using the STM32 platform.
- Wrote Ground Control Station software to change the configuration and connection timeout of the Radio Telemetry Tracker Drone.

Link Lab, University of Virginia

Jan. 2022 – Present

Research Assistant, Human-Robot Collaboration Lab

Advisor, Professor Tariq Iqbal.

- Created multi-agent learning environments with Issacgym to train agents to perform assembly tasks with cooperative reward.
- Trained actor critic (A2C) models for continuous action spaces to log performance in simulation in preparation for Sim2Real transition.

University of Virginia School of Architecture

Oct. 2022 - Apr 2023

Research Assistant, Networked Public Spaces

Advisor, Professor Andrew Mondschein.

- Investigated how IoT systems can be integrated into public for community driven environmental sensing.
- Assisted in the design of environmental sensors for deployment in Richmond Virginia.
- Wrote documentation of environmental sensor kit for visualization of community driven environmental sensing.
- Developed the firmware for environmental sensor connection to the internet via MQTT and WiFi.

Robotics Institute, Carnegie Mellon University

May 2022 - Aug 2022

Fellow in CMU@Robotics Institute Summer Scholars (RISS) Program (REU), RCHI Lab

Advisor, Professor Zackory Erickson.

- Explored the application of NIR spectroscopy in robotics for the classification of materials in enclosed containers.
- Wrote code to interface with two spectrometers via serial, one on the near-infrared + visual spectrum and the other on the near-infrared spectrum.
- Collected open dataset consisting of 13 containers of varying opacity and 13 substrate (liquid and granular) combinations.
- Collaborated with RIVeR Lab led by Taskin Padir at Northeastern University and Prepared manuscript after three months, leading to a publication in ICRA.

University of Virginia School of Data Science

June 2021 - Jan 2022

Research Assistant

Advisor, Professor Luis Felipe Murillo.

- Research assistantship for the “Networked Public Spaces” project at the School of Data Science
- Aided in Embedded systems development to integrate environmental sensors (particulate matter, CO2, temperature, air pressure, etc.).
- SMD Soldered and assembled environmental sensor kits.
- Configured LoRa-based, low-power wireless sensor network for environmental data acquisition.

WORK EXPERIENCE

University of Virginia Security Operations Center

Mar. 2021 – Present

Junior Analyst

- Identified security threats and safeguard information by eliminating or blocking threats.
- Utilized SPL and investigative techniques to defend accounts and network.
- Assisted with improving Splunk Dashboards and query automation.

TECHNICAL SKILLS

Programming Languages

C/C++, Python, Java

Software & Tools

ROS, Issacgym, Arduino, STM32, Jupyter Notebook

Skills

Sensor Integration, Embedded Software