Luc Tourangeau

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Education

B.S. Physics

(08/2015 - 05/2019) University Park, PA

Pennsylvania State University

M.S. Software Engineering - Incomplete

Pennsylvania State University (Online)

(started in 02/2022, 2 semesters completed) $Great\ Valley,\ PA$

Work Experience

Robotics Lab Research Assistant

(06/2019 - 08/2022)

Taylor lab at UNC Chapel Hill

Lab website - https://taylorlab.web.unc.edu/research/

Chapel Hill, NC

- Primarily responsible for implementing bio-inspired navigational algorithms into robots
- Created bare-bones programmable robot(s) interfaced to a Raspberry Pi over serial
- Built an API of Python bindings to the serial interface of the robot
- Built a host-side program using a motion tracking camera SDK for tracking the robot's position as it navigated around the lab
- Developed a custom communication protocol on-top of TCP/IP for issuing commands to robot(s) and relaying sensor data to the host computer
- Created a GUI for the host program using Qt and its bindings that allows a user to dispatch commands, update navigational algorithm parameters, and view robot position in real time
- Built a host database of motion tracking data csv's using SQLite
- Analyze and plot motion tracking data using numpy, pandas, matplotlib, and scipy
- Write documentation for the numerous hardware and software components of the project
- Mentor lab members on how to use my software packages and resolve code issues during code review
- Maintain lab git repositories

Lab Assistant

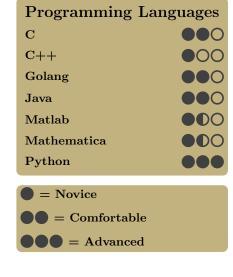
(06/2015 - 08/2015 & 06/2016 - 08/2016)

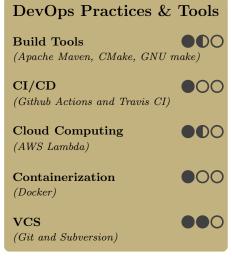
Mueser Rutledge Consulting Engineers

New York City, NY

- Worked collaboratively in a team to process large quantities of soil core samples and determine flood risks around NYC
- Conduct various geotechnical tests to determine soil mechanical properties
- Assisted in implementing an in-house QR code based cataloging system and database for the soil sample warehouse
- Increased automation of tasks related to soil data archival and retrieval

Skills and Tools





Other Skills

Languages: Bash, Cython, C#, and Javascript

Productivity Tools: LibreOffice, LATEX,

 $\operatorname{Microsoft}$ Office, Google Workspace, and Evernote

Python Developer Tools: Conda, mypy, pytest, Sphinx, Tox

Design Software: Blender, EAGLE, GIMP, Inkscape, and SolidWorks

- Self-motivated with experience working individually on a project with minimal oversight
- \bullet Team player that is capable of working collaboratively towards a goal