

# Luc Tourangeau

tourangeauluc0@gmail.com | 917-376-5861 | TurtleNav (GitHub)

## Education

### B.S. Physics

Pennsylvania State University

(08/2015 - 05/2019)

University Park, PA

### 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

Chapel Hill, NC

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

- 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

### Programming Languages

C	●●○
C++	●○○
Golang	●●○
Java	●●○
Matlab	●●○
Mathematica	●●○
Python	●●●

- = Novice  
●● = Comfortable  
●●● = Advanced

### DevOps Practices & Tools

<b>Build Tools</b> (Apache Maven, CMake, GNU make)	●●○
<b>CI/CD</b> (Github Actions and Travis CI)	●○○
<b>Cloud Computing</b> (AWS Lambda)	●●○
<b>Containerization</b> (Docker)	●○○
<b>VCS</b> (Git and Subversion)	●●○

### Other Skills

**Languages:** Bash, Cython, C#, and Javascript

**Productivity Tools:** LibreOffice, L<sup>A</sup>T<sub>E</sub>X, 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
- Team player that is capable of working collaboratively towards a goal