Elle Szabo

Website | 614-302-6552 | email | linkedin | github

Education

University of Southern California — Los Angeles, CA
B.S. in Computer Science — *May 2023 (Expected)*
- Major GPA: 4.0/4.0
- Activites: Treasurer at VEX Robotics USC, Track Club

Experience

Microsoft | *C/C++, PowerShell* — May 2021 - Jul 2021
Software Engineer Intern — *Redmond, WA*
- Created a proof-of-concept search indexing system to replace Windows' pre-relational-database indexer
- Proved the efficiency of 5 types of file metadata inclusion, will be rolled out on > 1 billion devices

NASA Jet Propulsion Laboratory | *ROS, Gazebo, Linux, librealsense* — Sept 2020 - Jan 2021
Software Engineer Intern — *Pasadena, CA*
- Developed a simulation pipeline with ROS and Gazebo for an autonomous inspection rover
- Integrated a 3D Intel RealSense camera and localization computer vision algorithms
- Expedited the simulation boot by 22% by creating a custom physics engine plugin

Lucid Circuit | *OpenCV, Makefile, Python, Keras, numpy, Linux* — May 2020 - Jan 2021
Software Engineer Intern — *Santa Monica, CA*
- Simulated a machine learning model for satellite telemetry using TensorBoard Lite visuals
- Created an API for employees that stores all information about the architecture hardware
- Programmed a statically linked OpenCV to demo the custom architecture's object tracking to client

Selected Projects

Vision and Language Navigation | *Python, OpenAI Gym, PyTorch, Flask* — Aug 2022 – Present
- Currently researching mid-level vision and contrast set techniques improving upon navigation sbenchmarks
- Research under *Jesse Thomason* in GLAMOR Laboratory

PyRibs | *Python, JAX, numba, numpy, OpenAI Gym* — May 2022 – June 2022
- Main contributor to PyRibs, an open-source Python library for exploring latent space of machine learning models
- Research under *Stefanos Nikolaidis* in ICAROS Laboratory

Autonomous Robot | *YOLO5V, Roboflow* — Aug 2021 – May 2022
- Programmed vision-based autonomous scoring using an optical sensor to place rings on the goals' branches
- Created data frame to capture RGB-D images and perform custom object recognition with YOLO5V

Terrortops - BattleBots | *drilling, tapping, assembling, painting, wiring, testing* — June 2022
- Performed strength testing and assembled completely hand-crafted Battlebots robot
- Competed in BattleBots World Championship VII as Alternate, rarely granted to non-experienced teams

Awards/Honors

2nd Skills in World, Think Award — *2022 VEX Robotics World Championship*
- As programming lead on team of 5, scored 2^{nd} of world's top 72 teams in skills
- Earned Think award for innovative use of autonomous optical scoring sensor

Presidential and University Scholarship Recipient — *University of Southern California*
- One of 200 chosen out of 64,000 applicants for a half-tuition merit scholarship plus $4000 award

National Merit Scholar — *National Merit Scholarship Corporation*
- $2500 scholarship for top 0.5% of 1.6 million for ability in mathematics problem-solving, reading, and writing

Technical Skills

Languages: Python, C/C++, SQL, Swift, C#, JavaScript, Java, HTML/CSS, Latex
Platforms: ROS, Linux, Raspberry Pi, Powershell, Heroku, Unity, Make, OpenAI Gym, Docker
Libraries/Tools: PyTorch, OpenCV, conda, Keras, Flask, TensorFlow, TFLite, Firebase, Stripe, GTest, Boost, rtabmap, AWS, OpenAI API

For a layout of all of my projects, please visit my Website.