Elizabeth Szabo

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EDUCATION

University of Southern California   *May 2023 (Expected)*
B.S., Computer Science, Major GPA: 4.00/4.00
- **Relevant Coursework:** Interactive NLP, Artificial Intelligence, Programming in Python, Intro to Electrical
- Engineering, Discrete Mathematics, Linear Algebra, Probability Theory
- **Activities:** VEX Robotics Treasurer, USC Club Track

EXPERIENCE

GLAMOR Lab USC   *October 2022 - Present*
Research Assistant - Jesse Thomason   Los Angeles, CA
- Conducting CoRL-aimed research on machine learning models for robotic navigation with natural language inputs
- Researching mid-level computer vision techniques improving upon sim-to-real VLN-CE benchmarks

Microsoft   *May 2021 - July 2021*
Software Engineer Intern   Seattle, WA
- Created a proof-of-concept search indexing system to replace Windows' pre-relational-database indexer
- Synthesized a custom query backend using internal Windows APIs to monitor changes across drives
- Proved the efficiency of 5 types of file metadata inclusion with unit performance testing on all system files

NASA - Jet Propulsion Laboratory   *Sept 2020 - Jan 2021*
Software Engineering Intern - Robotics   Pasadena, CA
- Developed a simulation pipeline with ROS and Gazebo for an autonomous inspection rover
- Expedited the simulation boot by 22% by creating a custom physics engine plugin
- Integrated a 3D Intel RealSense camera and cutting edge point cloud localization algorithms

Lucid Circuit   *May 2020 - Jan 2021*
Software Engineering Visiting Research Assistant   Santa Monica, CA
- Created an API that stores all information about the architecture hardware
- Simulated a machine learning model for satellite telemetry by mapping its computation to TensorBoard Lite visuals
- Programmed a statically linked OpenCV to demo the custom architecture's ability to track objects to prospective clients

PROJECTS / INVOLVEMENT

ICAROS Lab USC   *May 2022 - June 2022*
Research Assistant   Los Angeles, CA
- Improved PyRibs, an open-source Python library for exploring the latent space of machine learning models
- Streamlined API and implemented batching for algorithms such as Covariance Matrix Adaptation - Map Elites

VEX Robotics at USC   *Sept 2019 - May 2022*
Lead Programmer, Treasurer   Los Angeles, CA
- Managed > $9000 budget, tracked inventory, and filed event reports
- 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

SKILLS

Languages: Python, C++, Swift, Java, SQL, Javascript
Platforms: ROS, Linux shell, Arduino, Raspberry Pi, Jetson Nano, Docker, Powershell, Jyupter Notebook, Heroku
Libraries: PyTorch, OpenCV, PCL, rtabmap, Keras, TensorFlow, TFLite, Firebase, GTest, Boost, Numba, JAX

AWARDS

VEX Robotics Competition   *May 2022*
Programming Lead
- Placed 2nd in Skills overall and 3rd in division of the world's top 72 college teams

University of Southern California   *November 2018*
Presidential and University Scholarship Recipient
- One of ~200 chosen out of 64,000 applicants for a half-tuition merit scholarship plus $4000 award for an outstanding application