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Education

University of Rochester Rochester, NY
Bachelor of Science in Electrical and Computer Engineering *Aug. 2017 - May 2021*
- Honors: Tau Beta Pi

University of Rochester Rochester, NY
Master of Science in Electrical and Computer Engineering *Aug. 2021 - May 2022*
- Concentration: Robotics, Signal Processing

Work Experience

Open Robotics Mountain View, CA
Software Engineering Intern *May 2021 - Aug. 2021*
- Redesigned and integrated `rosdoc2` - a domain-agnostic tool for API document generation.
- Developed roadmap features for ROS 2's C++ client API and geometry libraries.
- Authored and contributed to various Secure Robotics Operating System (SROS2) tools and packages to address security concerns in the Robotics Middleware Framework (RMF).

Robotics and Artificial Intelligence Laboratory - University of Rochester Rochester, NY
Research Assistant *Aug. 2020 - May 2022*
- Investigated generalizable probabilistic models for motion adaptation of underactuated systems.
- Developed `cpg-viewer` - a Qt5 application (C++) for the 3D visualization of locomotion of arbitrary robot models.

Projects

- **ROS 2**: Open source contributor and reviewer of various packages in the Robot Operating System (ROS) ecosystem. Notable contributions:
  - New playback mechanisms for recorded data
  - Ability to build API documentation for Python packages in domain-agnostic documentation tool
  - Improved code linting infrastructure - file exclusion, better build system integration, etc.
  - "Environment helper" functions in the C++ utilties library
  - General bug fixes in the C++ client API
- **nodl_to_policy**: Tooling to generate a ROS 2 Access Control Policy from the Node Interface Definition (NoDL) of a ROS system, used in secure robotics applications - such as RoMi-H.
  Technologies: Python3, CLI entry points, XML, XSLT, Security.
- **Central Pattern Generator (CPG) viewer**: Cross-platform simulation application in Qt5 (C++11) for the 3-D visualization of arbitrary robot model locomotion under configurable CPG parameter sets.
  Technologies: C++, Qt, Eigen, CMake, Simulation, Inverse Kinematics.
- **Autonomous mobile robot software architecture**: Developed ROS packages (C++11) for simulation, perception, occupancy grid mapping, path planning, localization, path following controls, and an OpenGL GUI to explore a partially known world using a TurtleBot2.
  Technologies: C++, ROS, CMake, SLAM, Sampling-based motion planning, Pure pursuit.

Skills

Languages: C++, Python, C, Bash, Assembly, Java

Tools/Technologies: Linux, Git, CMake, SQL, Qt5, Testing frameworks (GoogleTest/pytest), CI tools (Travis CI, Github actions), Documentation (Doxygen, Sphinx)

Last updated: May 26, 2022