

JULIA SCHATZ

Contact

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🌐 juliaschatz

Electrical Engineering senior with applied experience in software development, autonomous robotics, and hardware design. Focus in control systems, embedded software, and robotics development. Experience leading and working in collaborative team environments.

Skills

ROBOTICS

ROS

Computer Vision

Motion and Trajectory Planning

Control Systems

SOFTWARE DEVELOPMENT

C

C++

Python

Matlab

MECHANICAL DESIGN

Solidworks

Onshape

ELECTRONICS

EAGLE

Altium

STM32

KiCAD

Education

University of Minnesota

Sept. 2018 to Current

BS Electrical Engineering 2021

Minor Computer Science 2021

Projects

NASA Robotic Mining Competition

Sept. 2019 to Current

Worked with a small team to develop autonomous robot for simulated lunar mining mission.

Used ROS to integrate sensor nodes for SLAM implementation.

Tested pre-hardware with Gazebo.

Developed safety critical firm real-time control system using STM32.

Tower Crane Control Research

Aug. 2020 to Current

Developing dynamic model and robust control law for underactuated nonlinear system.

Use of passivity theorem to prove theoretical stability.

Simulation in MATLAB, verification on lab hardware using Simulink.

Homemade Stereo Camera

Aug. 2020 to Current

Developing low-cost stereo camera for robotics applications using consumer parts.

CAD Automation Scripts

Aug. 2019 to Current

Created custom features for Onshape CAD used by hundreds of FIRST Robotics teams.

Used computational geometry to automate complex parts.

DC Motor Speed Controller

Designed a 9V 20A capable H-bridge electronic speed controller.

Selected hardware, designed PCB using EAGLE, wrote AVR firmware using embedded C and Assembly language.

Employment

University of Minnesota OIT

User Support

Aug. 2018 to Oct. 2020

Open Access Technology International

Software Development Intern

June 2016 to Aug. 2016

Worked with a team of OATI employees to assist with device and software testing. Created inventory and issue tracking workflows. Conducted internal user experience surveys to improve documentation.