

Joseph Schroedl

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<https://jschroedl.com>

Education:

North Carolina State University at Raleigh – Computer Engineering

- GPA: 3.4 / 4.0, Expected graduation Spring 2024

Work Experience:

Undergraduate Researcher, NCSU Department of Materials Science and Engineering

Fall 2022 – Present

- Designed and fabricated a remote chemistry lab based on project requirements. Created CAD models, 3D printed, tested, and iterated designs of lab components. The lab hardware interfaces with a robotic arm to complete lab procedures over the internet. Wrote Python software to control the robotic hardware. The lab will be used by students in a Fall 2023 class.
- Robotic lab tasks included project management, electrical engineering, software design, circuit board design and fabrication. Worked closely with a team creating a web interface to the lab. Weekly status meetings were held with professors to manage project progress and expectations.
- Debugged and enhanced existing Python software for chemical production and research. Updated QT based user interface, improved automated robotic actions, added features to enhance usability.

Summer 2022

- Designed Opentron Python protocol for chemical process automation. Integrated an Opentron OT-2 robotic pipette with a Dobot MG400 robotic arm and DIY spin-coater. Created an automatic Python script to choreograph robotic hardware actions.

IT Technician, NCSU College of Engineering – Part-time – 2021-2022

- Fulfilled support tickets and interfaced with students and faculty over the phone, email, and in-person.
- Provided on-site assistance and problem-solving for computer and network issues.
- Troubleshoot software and hardware problems for college of engineering computers.
- Provisioned new machines and installed operating systems.

Extracurricular Activities:

Solar Car Racing Team, NCSU SolarPack – 2019-2022

- Created real-time Grafana dashboards of solar car telemetry. InfluxDB for local data storage. Programmed NodeRed for interfacing with electronic hardware.
- Wrote code using Python, C, and C++
- Amateur Radio, LoRa
- Raspberry Pi embedded systems, PCB design

FIRST Robotics, 2016 – 2019

- Co-captain of FRC team 2059, electrical robotics lead, mechanical parts fabrication

Skills:

Programming Languages — Python, C, C++, Arduino (C/C++)

Operating Systems — Windows, Linux

Software — Autodesk Fusion 360, Autodesk Inventor, Ultimaker Cura, Visual Studio Code

Other — DC Electronics, Circuits, Photography, Astrophotography, Amateur Radio (KO4TCY)