

Matthew McCall

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About

A highly motivated computer science and computer systems engineering dual major who led multiple teams, contributes to the community, and is passionate for embedded development and robotics.

Project Experience

Open Algebra Software for Inferring Solutions (OASIS) – C++, C

Currently leading the team for the OASIS project, an open-source C++ library for computer algebra and symbolic manipulation.

Eye Robot – C#, Arduino C++

Eye Robot is a robot that assists the visually impaired in navigation. I wrote C# software that leverages ARKit on iOS to construct a 3D model of the room using LiDAR and send commands to the onboard ESP32. I also wrote the corresponding Arduino code for the ESP32 that listens and responds to the commands.

Roster – Next.JS, MongoDB

Led the team through the creation of a web application for finding roommates, significant others, friends, and study peers.

Research and On-Campus Work

Scientific Computation Research Center (SCOREC)

Integrated a **GPU-bound memory pool** in Omega_h, a C++ library for triangle mesh adaptivity which reduced runtime by 30% on high performance computing systems such as OLCF Frontier.

Built a **Django application** to allow researchers upload their findings from the Plasma Science Virtual Laboratory to an external data storage website.

Rensselaer Center for Open Source (RCOS)

Contributed to the OASIS and glibby projects.

Currently a RCOS mentor; Mentors provide guidance and technical support for multiple projects.

Student Makerspaces

Volunteered at the **Forge**, a student makerspace, by assisting students with 3D printing.

Worked in the **Mercer XLab**, guiding students through circuit design and soldering.

Education

Rensselaer Polytechnic Institute

Bachelors in Computer Science and Computer Systems Engineering, Class of 2026

Benjamin N. Cardozo High School

High School Diploma, Class of 2022

- Regents Advanced Designation with Mastery in Mathematics
- Member of the National Honors Society (ARISTA)
- Member of the Gateway Institute for Pre-College Education