Joseph Lodato

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EDUCATION

Syracuse University, *College of Engineering*   ***Anticipated Graduation May 2026***

Bachelor of Science: Computer Engineering, **Minor:** Physics, **Cumulative GPA:** 3.60

Honors: College of Engineering Deans list (6x): *All semesters to date*

Relevant Courses

Embedded Systems Lab * Microcontroller Lab * Robotics Programming Lab * Signals & Systems Analysis * Digital Logic Design * Computer Architecture & VLSI Design * Linear Algebra * Computational Physics * Operating Systems Design * Object-Oriented Programming (C++) * Computer & Network Security

PROJECTS

Formula SAE - Citrus Racing

- Lead and oversee the design and development of the team's next-generation Formula SAE vehicle, built from the ground up with improvements informed by past performance at competition.

'Smart Copy Machine' – Junior Year Design Project

- Designed & built a gantry-style pen plotter utilizing stepper motors, driver chips, cameras, and computer vision to scan and replicate hand drawn images by processing images into a series of coordinate-based motor commands.

Search and Rescue Robot

- Created a search and rescue robot that used ROS2 and AprilTags for localization for autonomous navigation around a room and through doors, scanning for a paper box that it would pick up & retrieve, returning to its start.

Custom Keyboard PCB

- Designed and assembled a fully custom keyboard PCB featuring Bluetooth and USB-C connection, programmable rotary encoders and macro keys, TRRS i2c expansion port, on-board battery/charging circuits, etc.

'Aperture Analysis' - Computational Physics Independent Study

- Built a C++ program using a custom FFT/IFFT implementation to process stellar images into coordinate data and reconstruct telescope aperture shapes from diffraction spike patterns. Used Python to visualize the results.

LEADERSHIP

Formula SAE – Citrus Racing, Syracuse University *(Oct 2022 – Current)*

- Roles held: Head of Electronics, President, Chief Engineer (current), and Head of EV Development (Current)
- Designed and implemented all vehicle electrical systems, including custom wiring harnesses, ECU control software, and data acquisition systems.
- Led integration of mechanical, electrical, and aerodynamic subsystems to ensure compatibility and performance.
- Managed $50,000+ team budget, secured corporate sponsorships, and oversaw financial and strategic planning with university administration.
- Directed design, fabrication, and programming efforts to transition the team's race car from internal combustion to its first electric vehicle powertrain.

Undergraduate Learning Assistant – Physics 307 Science and Computers I

- Provided individualized support to students learning computational physics, guiding them in building accurate models with C and Python on Linux platforms.

SKILLS

Programming: C/C++/C#, Java, Python, Understanding of Machine Code; **Software:** Git, KiCad, Fusion360, Google & Microsoft Office, SPICE, Candas; **Operating Systems:** Windows, Linux

WORK EXPERIENCE

AEC Engineering – Control Panel Technician Intern

- Fabricated industrial control panels to UL508A standards. Ensured panel function with verification. Verification steps included panel ring-outs, functional testing, PLC logic testing, etc.

Strout's Point Wharf Company - Dock Staff

- Oversaw and led a team of ~8 other dock staff while performing typical duties, such as assisting customers.

Freeport High School - IT Coordinator

- Prepared and deployed over 250 devices (including iPads and Chromebooks) to four different nearby schools.