Grant Congdon

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EDUCATION

Purdue University, College of Engineering **May 2027**

Bachelor of Electrical Engineering, 4.00 GPA

- Contrentration: Automatic Control
- Goss Scholar in John Martinson Honors College
- Relevant Coursework: Digital Circuits and Design, Electrical Engineering Fundamentals

PROFESSIONAL & RESEARCH EXPERIENCE

ASM International **May 2023 - Present**

Machine Learning Lead Intern

- Built full stack database interfacing tool in Python to manipulate datasets of over 100,000 data points
- Facilitated weekly progress update meetings with supervisors and coworkers to receive feedback and set goals
- Resolved database inconsistencies using a Python-based interface and updated database information using Excel
- Collaborated with NASA to draft a research paper to share results of ML accuracy of micrograph identification
- Tested website interfaces to provide extensive quality assurance feedback to clients for future improvement

Verma Lab **February 2024 - Present**

Undergraduate Research Assistant

- Implemented custom GUI in Python and Tauri that interfaces with Arduino to monitor and calibrate pH sensors
- Documented project(s) progress on weekly PowerPoint slides to summarize results and receive feedback
- Gathered with lab members to discuss project progress and brainstorm to help solve each other's problems

LEADERSHIP & INVOLVEMENT

Purdue Medical, Innovation, Networking, and Design (MIND) Club **January 2024 - Present**

Director of Research and Development

- Prepared technical workshops to engage new members and teach skills like CAD, programming, electronics
- Researched Velostat/Linqstat material for use in sensor array to detect prolonged immobility of hospital patients
- Conversed weekly with leadership to create agendas for meetings and help the club increase productivity
- Discussed with engineering consultant company to receive and implement prototype design improvements

Geauga Engineering and Robotics 4H Club **January 2016 - December 2023**

President, Vice President, Treasurer

- Organized weekly meetings and planned educational presentations for club members, both virtual and in-person
- Competed in 13 unique robotics projects using mechanical, electrical, and computer engineering concepts
- Coordinated responsibilities on engineering teams of up to 8 people to solve problems and document progress

TECHNICAL SKILLS

Computer Programming / Website Development / Frameworks

- Python, Java, C, HTML, CSS, Javascript, React, MATLAB, SQL, Computer Vision, Machine Learning

Computer-Aided Design & 3D Printing

- Onshape, EAGLE, Ultimaker Models, Ender 5 Pro

ENGINEERING PROJECTS

Head Tracking Wheelchair

- Utilized an Arduino and Inertial Measurement Unit for head tracking and relayed data to Raspberry Pi over BLE
- Rewired electric wheelchair with custom motor controlling system making use of Arduino and PWM
- Programmed an OpenBCI biosensing board to make EMG and inertial measurements for head position tracking
- Presented publicly at 8 different events and earned the Cleveland Clinic Biomedical Engineering Award

Micromouse

- Wrote variable-complexity maze-solving simulator in Java for algorithmic testing and path optimization
- Fabricated custom compact robot frame modeled using Onshape CAD and printed using Ender 5 Pro 3D printer
- Wired custom motor controllers and distance sensors for micromouse robot for increased accuracy and precision
- Experimented with PCB design to create a custom circuit board to meet specific competition requirements