

Amith Polineni

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Education

University of Virginia, School of Engineering and Applied Science

Aug 2024 – May 2028

Bachelor of Science in Mechanical Engineering, Minor: Computer Science | GPA: 3.96/4.00

Thomas Jefferson High School for Science and Technology | GPA: 4.46

Sep 2020 – Jul 2024

Technical skills

Mechanical: 3D Printing (Bambu, Prusa, DIY Systems), CAD (SolidWorks CSWA Certified, Fusion 360, Onshape), Finite Element Analysis, CNC Machining, Metalworking, Woodworking, Laser Cutting, Welding (MIG, TIG, Steel, Aluminum), Excel, MATLAB

Computer: Website Development, Automation, Servers, Networked Systems, Cybersecurity, Java, Python, C, C++, MySQL, Microelectronics (Arduino, Raspberry Pi), Soldering (PCB and Electronics), Artificial Intelligence, Prompt Engineering

Relevant coursework

Statics, Thermodynamics, Fluid Mechanics, Differential Equations, Linear Algebra, Physics, Discrete Math, CS/Control Systems

Work experience

Woodshop Safety Monitor | Ruffin Hall @ University of Virginia

Sep 2024 - Present

- Oversee and ensure optimal performance and safety of woodworking and metalworking equipment, conduct routine inspections, preventative maintenance, and troubleshooting complex issues on woodshop machinery, MIG welding machines, and hand tools.
- Leverage expertise in advanced manufacturing techniques, including machining and material selection, to train and support 20+ art students in executing intricate sculptural designs, enhancing their understanding of fabrication processes and safety protocols.

Robotics Research Assistant | George Mason University

Jun 2022 – Aug 2023

- Engineered efficient bio-inspired ornithopter (mechanical wing designs) using CAD software (Fusion 360) and optimized structural performance through Finite Element Analysis (FEA), for lightweight and robust advancements in flapping-wing aerial vehicles.
- Fabricated and tested wing prototypes using rapid prototyping techniques, including 3D printing and precision assembly with carbon fiber rods; conducted iterative design improvements based on experimental results to refine aerodynamic performance.

Projects

Automated Aquaponics Garden

Sep 2023 – Jun 2024

- Designed and implemented an IoT-enabled aquaponics system with Raspberry-Pi and web-based remote monitoring for automated irrigation and lighting of a 10-channel vertical farming system, optimizing floor space and resources for environmental efficiency.
- My farm operated autonomously for 10 weeks, growing and harvesting leafy greens (kale, lettuce, Swiss chard, and Spinach).
- Leveraged rapid prototyping and cost-saving solutions, including 3D printing and alternative materials, reducing expenses by 50%.

Academic experience

Mechatronics and Robotics Society (MARS) | Bucket-Drum Subteam Design Lead

Sep 2024 - Present

- Devoted 30+ hours weekly to develop a lunar rover for regolith berm construction as part of a NASA Lunabotics challenge.
- Developed expertise in SolidWorks to solo CAD a 300+ part lunar rover including optimizing weight and strength with FEA.
- Presented design and conducted Trade Studies for Preliminary and Critical Design Reviews and iterated based on feedback.
- Manufactured aluminum components using a Waterjet, MIG Spool Welding, and Metalworking. 3D printed for rapid prototyping.

3D Printing Club | Slicer & Print Bed Optimization Lead

Sep 2024 - Present

- Designed, built, and optimized 3D printers on a 5-member team managing part of the university's 3D printing infrastructure.
- Utilized Fusion 360 to CAD models, using the club as a creative outlet to experiment with and produce complex 3D-printed parts.
- Troubleshooted problems and optimized slicer settings of Bambu Lab (PIP/S, A1/ Mini, X1 Carbon) and Prusa (Mk 3) printers.

Association Council (Dorm) | President of Page-Emmet Dorms

Oct 2024 - Present

- Elected after starting a nightly watch party of Love Island, attracting 200+ people and becoming a campus micro-celebrity.
- Organize social events for 300+ residents in my dorm to create an environment for community building and academic initiatives.
- Collaborated with my council to manage a budget and advertise events: movie nights, pumpkin painting, and birthday parties.