Robin Hur

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Education

University of Virginia, School of Engineering and Applied Science **Charlottesville, VA | 2024–2027**
B.S in Mechanical Engineering, GPA: 3.72

- **Relevant coursework:** Statics, Strength of Materials, Thermodynamics, Fluid Mechanics, Thermal Fluids, Material Science

Garnet Valley High School **Glen Mills, PA | 2020-2024**
Class of 2024, GPA: 4.31/4.50

Skills

- **Design & Analysis:** SOLIDWORKS (CSWA), Autodesk Fusion, Bambu Studio, GD&T, Python, Microsoft Office, FEA, Fabrication & Rapid Prototyping, Technical Documentation
- **Languages:** English (native), Korean (fluent), French (intermediate)

Experience

Undergraduate Research Assistant, *UVA Dept. of Chemical Engineering* **Aug 2024 – Nov 2025**

- Conducted all-atom molecular dynamics simulations using AMBER to study hydrogel formation at the atomic level
- Created and managed 100+ simulation setup files with standardized naming and organization workflows to improve reproducibility and consistency
- Automated Python analysis workflows, generating standardized CSV outputs for contact, distance, and aggregation metrics; enabled version-controlled sharing via Git for supplementary materials
- Generated and visualized molecular trajectories using VMD to analyze structural evolution and molecular interactions
- Produced publication-quality figures and supplementary data; contributed written sections, data interpretation, and curated datasets to a manuscript currently under review

Research Outputs

- UVA Biomaterials Research Symposium **Jul 2025**

Mechatronics and Robotics Society, *Mechanical Subteam* **Aug 2025 – Present**

- Designing and building a robot for the NASA Lunabotics competition
- Developed CAD models for a Lunabotics-style robot capable of manipulating lunar regolith
- Conducted research on vibration frequency effects in granular material flow to optimize excavation subsystem performance

Bridge Program Counselor, *UVA School of Engineering and Applied Sciences* **Jul – Aug 2025**

- Mentored 38 first-year engineering students as part of a 6-member counselor team during a 3.5-week residential program, guiding academic, social, and personal development
- Served as a Resident Advisor, cultivating an inclusive, supportive community that promoted student engagement and retention
- Led pre-calculus tutoring sessions, strengthening foundational skills and improving students' readiness for college-level coursework

Projects

Potential Energy Propulsion Racer, *Project Member* **Nov 2025**

- Collaborated on an engineering team to design and build a 3D-printed, potential-energy-powered racing vehicle
- Applied SolidWorks CAD modeling, mechanical transmission design, and rapid prototyping to develop and optimize vehicle components
- Delivered final technical report and curated comprehensive inventory of CAD parts, assemblies, and design files

Clean My Water, *Project Consultant* **Jan – May 2025**

- Led a team developing a portable, low-cost water filtration device targeting microbial and sediment contaminants
- Designed and prototyped functional solutions using CAD, woodworking, 3D printing, and rapid prototyping
- Produced final technical report and presented project poster at an annual engineering showcase