

# Jake Kerns

johnwkerns2028@vt.edu | [www.linkedin.com/in/john-kerns-jwk](http://www.linkedin.com/in/john-kerns-jwk) | [Jakesengineering.org](http://Jakesengineering.org)

## EDUCATION

---

### Virginia Tech College of Engineering

B.S. Mechanical Engineering, Robotics and Mechatronics Focus | GPA: 3.5/4.0

Blacksburg, Virginia

Expected Graduation: May 2028

## SKILLS

---

**Technical Skills:** C++ | Python | Java | Fusion 360 | OnShape | Inventor | 3D Printing & Prototyping | Embedded Development boards

**Interests:** Humanoid Robotics | Electro-Mechanical Device fabrication/prototyping | Mixed Martial Arts | Wrestling | Volunteering

## RELEVANT EXPERIENCE

---

### Persona AI Software Engineering Intern (Humanoid Robotics)

Humanoid Locomotion Engineer

Pensacola, Florida

May 2026 – December 2026

- Developed techniques and software tools to reduce the sim-to-real gap between simulation and deployed humanoid robotic systems through hardware parameter estimation
- Developed experimental reinforcement learning policies to improve humanoid locomotion using the NVIDIA Isaac stack, MuJoCo, and physical hardware test platforms, leveraging techniques such as domain randomization and curriculum learning
- Led daily diagnostic testing and debugging efforts to maintain reliable testing platforms, including robot disassembly, reassembly, and coordination with technician teams
- Coordinated across teams and locations to bridge low-level and high-level control systems on humanoid platforms through hardware and software integration knowledge

### Mid Atlantic Aviation Partnership Intern

Drone Technology and Test Engineer

Blacksburg, Virginia

April 2025 – Present

- Fully designed and fabricated an in-house specialized UAV for Military C-UAS testing, including CNC milling, custom CF infused printing, and avionic integration all end-to-end
- Collaborated with engineering team to integrate UAS platforms for field testing, including hardware fabrication, radar/camera support, and flight compliance with FAA Part 107
- Designed and built two adjustable carbon fiber rail systems for separate UAV platforms
- Assisted operations team in multi-site field testing, ensuring safety protocols, reliable data collection, and engineering performance

### Virginia Tech Competitive Robotics Organization

Mechanical Team Lead

Blacksburg, Virginia

January 2025 – Present

- Led team meetings and focused on the mechanical team's progress and deliverables for IEEE's competitive robotics event
- Contributed to mechanical design and strategy via large OnShape design assemblies, prototyping, and testing for two 1'x1' robot builds for separate challenges
- Developed particle intake sorting system, contributing ~50% of mechanical design my first year
- Collaborated on team-oriented design, incorporating electrical and software constraints into mechanical solutions

### Novel Omni-Directional Locking Joint Station

Personal Project

September 2024 – Present

- Designing and developing a desk-mounted omni-directional locking arm for lab/desktop use
- Developed the Fibonacci-sphere-inspired model using Fusion 360 Python Script tool to create universal interlocking joints
- Wired and coded an Arduino Nano to interpret two potentiometers and control two motors via the Saber Tooth 2X12 Motor Controller mounted in a custom enclosure for desktop vice use
- Incorporated current sensors to safeguard overbearing stress via current restriction

## OTHER EXPERIENCE

---

### ASME at Virginia Tech

CAD workshop lead

Blacksburg, Virginia

Sept 2025 – Current

- Led CAD workshops on Fusion 360 and OnShape to underclass engineering students covering basic modeling curriculum
- Groups of 5-15 Students every other week