Jake Kerns

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EDUCATION

Virginia Tech College of Engineering **Blacksburg, Virginia**
B.S. Mechanical Engineering, Robotics and Mechatronics Focus | ***GPA: 3.5/4.0*** *Expected Graduation: May 2028*

SKILLS

Technical Skills: C++ | Python | Java | Fusion 360 | OnShape | Inventor | 3D Printing & Prototyping | Dimensioning
Interests: Humanoid Robotics | 3D Printing | Mixed Martial Arts | Wrestling | Volunteering

RELEVANT EXPERIENCE

Mid Atlantic Aviation Partnership Intern **Blacksburg, Virginia**
Drone Technology and Test Engineer *April 2025 – Present*

- Fully designed and fabricated an in-house specialized UAV for Military C-UAS testing
- 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 **Blacksburg, Virginia**
Mechanical Team Lead *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

"Stringless" Guitar, New Instrument Project
Personal Project *September 2024 – November 2024*

- Conceptualized and designed a distance-sensing guitar as part of a new musical instrument project, aimed at innovating traditional guitar mechanics
- Integrated an Arduino Nano to enable real-time distance sensing, translating finger positions into tone manipulation without the use of traditional strings using SR04 sensors as input and potentiometers to control scale range and volume
- Utilized Fusion 360 to create detailed 3D models and simulations for the guitar's structure and composite components

OTHER EXPERIENCE

Virginia Tech Dining Services **Blacksburg, Virginia**
Student Worker *September 2024 – March 2025*

- Operated kitchen equipment and maintained high standards of cleanliness and food safety in accordance with health regulations
- Prepared and cooked a variety of menu items in a high-volume, fast-paced dining environment, serving over 7,000 students daily

ASME at Virginia Tech **Blacksburg, Virginia**
CAD workshop lead *Sept 2025 – Current*

- Led CAD workshops on Fusion 360 and OnShape to underclass engineering students covering basic modeling curriculum
- Groups of 5-20 Students every other week