**Jake Kerns**

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**EDUCATION**

**Virginia Tech College of Engineering Blacksburg, Virginia**

*B.S. Mechanical Engineering focus in Robotics and Mechatronics*| ***GPA: 3.7/4.0*** *Expected Graduation May 2028*

**SKILLS**

**Technical Skills:** C++ | Java | Fusion 360 | Modeling | Prototyping | Dimensioning | Drafting

**Soft Skills:** Public Speaking | Collaboration | Group Work | Problem-Solving

**PROJECTS**

**“Stringless” Guitar, New Instrument 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
* Utilized Fusion 360 to create detailed 3D models and simulations for the guitar's structure and components
* Applied advanced 3D printing techniques to fabricate custom parts, ensuring precise fit and functionality
* Integrated Arduino microcontroller to enable real-time distance sensing, translating finger positions into sound manipulation without the use of traditional strings

**Large-Scale Christmas Tree, Community Service Project** *October 2023 – December 2023*

* Contributed to the initial design and schematic planning for a large-scale community Christmas tree
* Led the engineering and implementation of the entire wiring system, ensuring safe and efficient installation of lights and decorations
* Coordinated with team members to organize and execute the project, maintaining alignment with community goals

**Arduino-Based Miniature Greenhouse, Agricultural Engineering Project** *September 2022 – November 2022*

* Designed and developed a fully functional miniature greenhouse system incorporating Arduino-based automation for environmental data collection
* Programmed C++ code to regulate temperature, humidity, and light levels, optimizing plant growth conditions
* Engineered and built all physical components of the greenhouse structure, ensuring durability and proper ventilation

**WORK EXPERIENCE**

**Virginia Tech Dining Services Blacksburg, Virginia**

*Student Worker September 2024 – Present*

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

**SCHOOL INVOLMENT**

**Virginia Tech Competitive Robotics Organization SEC Mechanical team member** *January 2025 – Present*

* Attend team meetings and contribute to mechanical design and strategy for competitive robotics events
* Focusing on the mechanism design, modeling, and rapid prototyping aspect of the team robot for mechanical implementation
* Team oriented design work, designs considering other team constraints (electrical/hardware and software needs)

**ASME Virginia Tech Member** *January 2025 – Present*

* Active Member, attend meetings and professional development events
* Navigate AMSE’s national tools to become a better engineer outside the classroom and labratory

**COMMUNITY SERVICE**

**Habitat for Humanity Richmond, Virginia**

*Team Lead October 2022 – April 2024*

* Led volunteer groups of 5+ individuals, managing team dynamics and ensuring efficient task completion on construction sites coordinating with firms and nonprofits to host guest speaker events, showcasing their contributions
* Accumulated 110+ hours of service, coordinating efforts to build homes and improve living conditions for underserved communities
* Trained and mentored new volunteers, providing guidance on construction techniques, safety protocols, and team collaboration