Kalen Cole Jaroszewski

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EDUCATION

Texas A&M – College Station, TX **Mechanical Engineering - BS** **GPA** - 3.610 Graduation 2027

EXPERIENCES

Human-Empowering Robotics and Controls (HERC) Lab - Mechanical Intern June 2025 – Present

- Developing a trade study focused on improving torque density while reducing stiction and bearing costs within a magnetic cyclodial gearbox
- Designing two interchangeable Halbach-arranged COTS magnet rotor layouts, and performing dynamometry to compare the traditional design against an experimental design
- Applying beam theory in the design process of blade flexure components experiencing static and dynamic loads

TAMU TURTLE Robotics - Development VP (Senior Leadership) May 2024 – Present

- Coordinating 10 officers operating a multi-organizational Hatchling Development Program, developing 120+ members semesterly in engineering, technical, and soft skill proficiency
- Successfully pitching and overseeing the expansion of Hatchling to TAMU and TAMU Galveston organizations
- Architect of the Hatchling overhaul efforts, resulting in a sixfold increase in project completion rate to 60%, a tripled retention rate to 75%, and reduced spending to net-positive under a $1,400 budget within two semesters

PROJECTS

Quadruped Robot [QUAD V2] | Team of 10 (Ongoing)

- Developing a full-sized 3-DOF robotic leg and integrating actuators with a custom cycloid gearbox to facilitate backdriveability, critical for safety and torque feedback control
- Optimizing leg serviceability, including replaceable silicon on high-wear feet, modular actuator connections, and accessible toe-link failure mode
- Implementing a design inspiration of the stacked actuator joints from commercial counterparts to reduce the moment of inertia and increase the range of motion over the prior attempts

Miniature Quadruped Robot [Mini-QUAD] | Team of 7

- Designed a compact bearing housing system that offloads stress on the hip servo and allowed a 21% reduction in the upper leg width to under 2.3 cm
- Modular leg components were designed for additive manufacturing and serviceability to reduce cost and serve as a software test bed for QUAD V2

ORGANIZATIONS

TAMU IGNITORS Rocketry Team - Member November 2024 – Present

- Integrated avionic systems for a hybrid rocket at the International Rocket Engineering Competition
- Operated a CO2 Laser Cutter in the manufacturing of the rocket's bulkheads, centering rings, and fins

TAMU TURTLE Robotics - QUAD Sub-Team Lead January 2024 – Present

- Manage 8 members and a Gantt chart in the mechanical design of a $2,000+ Raspberry Pi quadruped robot
- Led 6 members in the design of Mini-QUAD, a 10-inch-long, 200-component Raspberry Pi quadruped robot

FIRST Tech Challenge Team - Lead Technician and Project Manager August 2018 – May 2023

- Co-led the mechanical design process and assembled a robot that placed 2nd in the world (3000+ teams)
- Developed an objective-based process for strategy development, resulting in a five-month competitive advantage

ACTIVITIES

- Hackathons
  - Rocket with Landing Simulation (1-week) November 2024
  - Blackjack with probabilities (24 hours) September 2023
- TAMU Intramural Volleyball and Football August 2023 – Present

SKILLS

- **Mechanical**: SolidWorks (CSWP), MS Office Suite (Excel, Word, PowerPoint), GD&T, Soldering, Power Tools
- **Software:** Python, C++, Git, Linux