Kalen Cole Jaroszewski

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EDUCATION

Texas A&M University – College Station, Texas | BS in Mechanical Engineering | GPA - 3.57 | May 2027

EXPERIENCES

Human-Empowering Robotics and Control (HERC) Lab September 2025 – Present
Undergraduate Researcher, part-time

- Continuing internship project, designing an alternative rotor design for an SBIR Phase 2 space-rated magnetic cycloidal gearbox (CyMG)
- Developing an EtherCat-based dynamometer station compatible with the three gearbox and actuator lab projects

Texas A&M Engineering Experiment Station (TEES) June 2025 – August 2025
Robotics and Automation Design Lab Intern

- Presented a trade study focused on improving torque density while reducing stiction and hysteresis within a CyMG
- Manufactured a custom 20:1 Halbach-array CyMG using COTS magnets with modular, swappable inner rotors to enable future stiction comparison between a baseline and an experimental rotor design
- Designed a RESOLUTE encoder readhead mount capable of adjusting within its 0.7–0.9 mm operating range using FEA and verification through beam theory derivation of blade flexures

Texas A&M University Robotics Team and Leadership Experience (TURTLE) May 2024 – Present
Development Vice President, senior leadership in a 320-member robotics organization

- Engaging 200+ undergraduate engineers a semester through the Hatchling Development Program, while coordinating 20 inter-organizational officers and the curriculum spanning technical, project management, and leadership skills
- Pitching and executing a multi-organization Hatchling expansion plan, resulting in partnerships with 3 TAMU and TAMU Galveston organizations to address internal capacity limitations and doubling program reach
- Spearheading the Hatchling overhaul, driving tenfold member count (120 internal), a sixfold increase in project completion (to 60%), tripling member retention (to 75%), and achieving net-positive operations within two semesters
- Implementing an automated Excel tracking system, reducing procurement lead time by 1 week across 21 project teams, and allowing project spending analysis to assist budget allocation decisions
- Designing an in-house ESP32-based game controller to expand freedom throughout the creation of Hatchling projects

ORGANIZATIONS

TAMU AggieSat Laboratory - AggieSat8 TMS Member | Team of 6 November 2025 – Present

- Creating trade studies for the thermal, mechanisms, and structures of an ISS mission to verify space application of liquid crystal antennas
- Applying the V-model systems engineering life cycle from requirements and verification to validation

TAMU TURTLE Robotics - QUAD Mechanical Lead | Team of 10 January 2024 – December 2025

- Managed 8 members in the mechanical design of a $2,400 Raspberry Pi quadruped robot from pitch to completion
- Designed a backdriveable 19:1 cycloidal actuator using an MJ5208 motor controlled via a Moteus-C1 or R4 to conform to safety and torque feedback control requirements
- Optimized a 3-DOF robotic leg using design for additive manufacturing and assembly principles, including modular actuator connections, replaceable silicon on high-wear feet, and accessible toe-link failure mode
- Led the design of Mini-QUAD, a 10-inch-long, 200-component robot serving as a low-cost software testbed for QUADV2
- Designed an upper leg bearing housing at 2.3 cm width (21% reduction from v1), while reducing load on hip servo

TAMU IGNITORS Rocketry Team - Avionics Member | Team of 15 November 2024 – May 2025

- Manufactured all non-COTS flight-critical components using a CO2 Laser Cutter and additive manufacturing
- Designed a 360° field of view camera department featuring 3 ESP-CAMs and a MicroSD card breakout board
- Programmed a prelaunch startup sequence to prevent the ESP-CAMs from overheating during launch delays

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

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

Hackathons

- Rocket with Landing Simulation (1-week) November 2024
- Blackjack with probabilities (24 hours) September 2023

SKILLS

- **Mechanical**: SolidWorks (CSWP), ANSYS FEA, GD&T Y14.5, DFMA, Soldering, Power Tools
- **Software:** MS Office Suite (Excel, Word, PowerPoint), Python, C++, Git / GitHub, Linux, Inkscape