

Ryo Kato

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EDUCATION

Texas A&M University

Bachelor of Science in Mechanical Engineering

Minor in Mathematics

College Station, Texas

May 2028

Cumulative GPA: 3.1/4.0

Relevant Coursework: Solid Mechanics, Geometric Modeling for Mechanical Design, Linear Algebra, Differential Equations, Principles of Materials and Manufacturing, Principles of Electrical Engineering, Statistics

PROFESSIONAL SUMMARY

Dedicated Mechanical Engineering student at Texas A&M University experienced in building robotic platforms. Proficient in Python, Embedded C++, SolidWorks, and System Design. Passionate about control systems, mobile space robotics, and mechanical design. Actively involved in multiple collaborative hands-on projects to further expand and refine my technical skill set.

SKILLS

Software: CAD (SolidWorks, Onshape), SolidWorks FEA, ROS, Git & Github, Linux, Windows, Visual Studio Code (VS Code), Arduino IDE, QGIS, DaVinci Resolve, Microsoft Office (Word, Excel, PowerPoint)

Hardware: Raspberry Pi, Arduino, Multimeter, Soldering, 3D printers, Power Tools, GD&T

Programming: Python (NumPy, SciPy), Embedded C++, R, JavaScript (Node.js, Express.js, Socket.IO), HTML/CSS

Languages: Fluent in English and Japanese

RELEVANT EXPERIENCE

Human-Empowering Robotics and Control (HERC) Lab

College Station, Texas

Undergraduate Researcher | Advisor: Dr. Gray Thomas

Jan 2026 – Present

- Modeling end effectors using SolidWorks and implementing novel control schemes for strength amplification onto a KUKA LBR iiwa 14 using ROS and C++

Control and Robotics (CTRLROBOT) Lab

College Station, Texas

Undergraduate Researcher | Advisor: Dr. Minghui Zheng

Aug 2025 – Dec 2025

- Conducted research into a 3D printable anthropomorphic robotic gripper, implemented calibration tests with Dynamixel servos and integrated force-sensing resistors for feedback control using Embedded C++ and Arduino

Texas A&M University Robotics Team and Leadership Experience (TURTLE)

College Station, Texas

Software Engineer - OLSN

Jan 2026 – Present

- Designing the electrical system for a prosthetic hand controlled by a gesture control armband (MYO).

Controls System Engineer - BLNC

Aug 2025 – Dec 2025

- Implemented a cascade PID control system for a self-balancing two-wheeled inverted pendulum robot in Python with Neo motors and Moteus motor controllers, enabling pitch and position control

Mechanical Systems Lead - DRON

Jan 2025 – Present

- Leading a team of 5 members to develop a modular mechanical design of an autonomous drone swarm for disaster response
- Implementing an iterative 3D printing prototyping process to rapidly incorporate learned improvements, resulting in a collaborative agile design cycle
- Deployed flight capabilities using Betaflight and troubleshooting critical mechanical and electronic components
- Prepared detailed technical design reviews for all subteams, receiving positive feedback from reviewers

Hatching Program Member

Sep 2024 – Dec 2024

- Collaborated with two teammates to win first place in an intraorganizational robotics competition
- Utilized SolidWorks to design and model a RC vehicle capable of placing an object into a moving target
- Integrated electronics and coded the entire Arduino program, tested and troubleshooted issues

Texas A&M Rocket Engine Design (RED)

Avionics and Controls Subteam Member

- Delivered a Critical Design Review (CDR) for Elysium 2 to industry professionals, presenting detailed hardware specifications and showcasing tested safety features on the system
- Conducting detailed component analysis for electronics, wires, and sensors to confirm compatibility and prevent integration issues, minimizing project delays and resource waste
- Presented a Design Concept Review (DCR) and Preliminary Design Review (PDR) for Project Ragnarok, explaining modifications to Elysium 2's avionic/electrical systems for use in a semi-cryogenic rocket engine

Structures Subteam Member

Feb 2025 – Aug 2025

- Developed a modular vertical test stand for a 1500 lbf thrust liquid bipropellant rocket engine, enabling testing capabilities in flight-like configurations
- Designed a steel flame diverter capable of redirecting a 1800 K exhaust plume for 15+ seconds, safeguarding critical test infrastructure and the surrounding environment
- Conducted failure mode and effects analysis (FMEA) and developed component testing procedures to minimize operational failure and improve safety of the team
- Prepared and presented a Preliminary Design Review (PDR) for Elysium 2, addressing technical feasibility of the flame diverter and demonstrating system requirement compliance

PUBLICATIONS & POSTERS

- I. Wilhite, C. Ambroziak, A. Briggs, **R. Kato**, et al., “*Disaster Response Observation Network (DRON)*”, TURTLE Robotics, Nov 20th, 2025 [Showcase Poster]
- J. Foltyn, A. Bailey, J. Belda, B. Chuang, K. X. Fernandez, J. Godfrey, **R. Kato**, et al., “*Self Balancing Rovers (BLNC)*”, TURTLE Robotics, Nov 20th, 2025 [Showcase Poster]
- I. Wilhite, A. Briggs, J. Fuerst, E. Hannsz, C. Ambroziak, Q. Belmar, M. Ferguson, T. Francis, **R. Kato**, et al., “*Disaster Response Observation Network (DRON)*”, TURTLE Robotics, April 26th, 2024 [Showcase Poster]

EXPERIENCE

SIMIODE

College Station, Texas

SIMIODE Challenge Using Differential Equations Modeling (SCUDEM)

Oct 2025 – Nov 2025

- Received the Meritorious award in an international differential equations modeling contest, worked with 2 teammates to solve real world modeling problems and present a 10-minute video presentation

College of Engineering, Texas A&M University

College Station, Texas

Student Assistant | ENGR 217 Experimental Physics and Engineering Lab III

Jan 2026 – Present

Student Assistant | ENGR 102 Engineering Lab I - Computation

Aug 2025 – Dec 2025

- Assisting students in labs on electromagnetism and electromechanical systems, grading lab reports on a weekly basis
- Assisted in teaching Python to over 100 students and graded assignments in a timely manner
- Hosted exam reviews to dozens of students, provided academic support to students during office hours

Texas A&M University Robotics Team and Leadership Experience (TURTLE)

College Station, Texas

Documentation/Logistics Officer

April 2025 – Present

- Created and managed the application system, processing 450+ applications and improving data organization
- Secured a \$500 corporate sponsorship, alleviating budget constraints and strengthening project funding
- Creating and maintaining the TURTLE Knowledge Base, writing technical documentation on the common power tools, software, and hardware used in the organization and outlining system engineering processes
- Managing important forms and communication with the Mechanical Engineering Business Office

Students for Exploration and Development of Space (SEDS)

College Station, Texas

TAMU Lunar Search and Rescue Team

Oct 2024 – Nov 2024

- Competed in the Lunar Search & Rescue Design Challenge by Texas Space Grant Consortium (TSGC) with 8 members
- Implemented motion planning algorithms for rovers using Python and Space Teams Pro for obstacle avoidance

TIDAL Hackathon

College Station, Texas

Team CrewQuest

Oct 2024

- Proposed a web/mobile application that provides personalized hangouts for college students, intended to simplify meeting new people and encourage the exploration of College Station