Dallin Cordon

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Education

Brigham Young University, Ira A. Fulton College of Engineering *Graduation*

MS, Mechanical Engineering — Robotics; *GPA*: 3.85 **Provo, UT** **Dec 2024**
- *Specialized Courses*: Autonomous Aircraft (Flight Dynamics and Control), Robotic Vision, Robotic Localization and Mapping, Engineering Software Development, Optimization, Math of Signals and Systems, Neuromechanics, Multi-Agent Systems

BS, Mechanical Engineering; *GPA*: 3.63 **Provo, UT** **Apr 2022**
- *Specialized Courses*: Advanced Dynamics, Controls, Robotics, Mechatronics, System Modeling, Measurements, Fluid Dynamics, Mechanical System Design, Material Science, Manufacturing Processes, Electrical Systems, ODEs, Technical Writing, Statistics

Experience

BYU Robotics and Dynamics Lab **Provo, UT / Nancy, FR** **Aug 2022 — *Present***
Graduate Researcher
- Conducted novel research into dynamic human-robot interaction, emphasizing collaborative manipulation between individuals and soft, pneumatic continuum robots mounted on a custom omni-directional mobile robotic base.
- Leveraged natural compliance of soft robots to streamline mobile base axis control and enhance safety in collaborative environments.
- Supervised and mentored undergraduate students through robotic hardware and software development dedicated to optimizing manipulation and vehicular systems, subsystems (pneumatics, power, data, control), and interfaces for human-robot interaction.
- Assisted development and testing of embedded soft robot pressure control system using custom RS-485 communication schemes.
- Received *Judges Award* at university-wide research event and *Best Demo* award at international soft robotics conference.

BYU Rocketry Association **Provo, UT** **Sep 2018 — Apr 2022**
President Apr 2021 — Apr 2022
- Developed operational procedures for organization of over 350 students with 4 experience tiers.
- Supported coordination and execution of all rocketry activities before, during, and after scheduled launches including testing.
- Interfaced between administration, launch site personnel, and internal team to establish functional communication channels, ensure compliance, document standard practices, and maintain positive relationships.

High-Power Team Lead Jul 2020 — Jul 2021
- Directed rocket mission life cycle from pre-launch testing to flight-readiness and operations.
- Led interdisciplinary team of nine in development (requirements, design, airborne vehicle dynamics, material procurement, build) of infrastructure for rocket operation, flight stability, active apogee control, recovery, and payload integration.
- Ensured proper integration and functionality of subsystem interfaces (sensor suite, energetics, control surfaces, recovery, etc.).

BYU Autonomous Mars Rover **Provo, UT** **Aug 2021 — July 2022**
Mechanical Team
- Collaborated with 28 student engineers to design a full-scale Mars Rover for an international competition.
- Redesigned rocker-bogie 6-wheel suspension system to fold and lock into space-saving storage and transportation configurations.
- Collaborated with interdisciplinary teams to design and implement a pivotal elevator component crucial for—and interchangeable between—science missions and manipulation tasks.
- Carried out comprehensive subsystem technical design documentation to facilitate seamless transferability.

BYU College of Engineering **Provo, UT** **Jan 2021 — Apr 2023**
Controls TA, Robotics TA Aug 2022 — Apr 2023
- Instructed and supported students in application of various control methodologies, on simulation and hardware VTOL systems.
- Conducted weekly lectures on control theory, communicating complex concepts to students unfamiliar with the domain.

Robotics TA Aug 2022 — Dec 2022
- Taught key concepts on robotic manipulators, including inverse kinematics, dynamics, and control.

General Dynamics Ordnance and Tactical Systems **Healdsburg, CA** **Jun 2020 — Aug 2020**
Mechanical Engineering Intern
- Performed static structural and modal analysis on M982 artillery shell control actuation systems using ANSYS to assess structural integrity when exposed to firing setback forces in excess of 15,000 G's.
- Researched non-explosive deployment alternatives for canard extension in navigation shells exploring solenoids, lead screws, and other actuation mechanisms to optimize material acquisition requirements.
- Worked directly with technical team assisting with vibration test fixturing and component assembly troubleshooting.

Technical Skills

Python	ROS	MATLAB	Git / Bitbucket	SolidWorks	Composites
C++ / C / C#	OpenCV	Linux	LaTeX / Documentation	Machining	Portuguese (Advanced)