# Andrew Zheng

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## EDUCATION

**Clemson University** **Clemson, SC**
*Master of Science in Mechanical Engineer*, Control Systems, May 2023
Cumulative GPA: 3.80/4.00

*Bachelor of Science in Mechanical Engineering*, Minor in Math, May 2021
Cumulative GPA: 3.86/4.00
Honors: magna cum laude

## SKILLS

**Software:** ROS1, Gazebo, Linux, CoppeliaSim, CasADi, Oracle VM Virtualbox, Tensorflow, Anaconda, Simulink, Solidworks
**Programming Language:** Python, Matlab, C++, LaTeX, PLC, VBA Excel

## PROFESSIONAL EXPERIENCE

**DIRA Lab**, Research Assistant, May 2021 - Present **Clemson, SC**
- Facilitated 2-year integration plan of state-of-the-art planning and control for legged robots
- Integrated optimal global planner for quadruped locomotion
- Developed modular physics informed neural network in Tensorflow, increasing lab's capability in nonlinear system analysis
- Generated standard workflow for end-to-end deployment of robot model to control for quadruped robots
- Trajectory prediction of nonlinear dynamics through Koopman operator theory for robotic applications

**Clemson University**, Teacher Assistant, May 2021-Present **Clemson, SC**
- Enhanced knowledge and critical thinking of students by highlighting key concepts covered in course

**Parker TechSeal**, Mechanical Engineer Intern, May 2019 – Aug 2019 **Spartanburg, SC**
- Performed nondestructive damage control by identifying defective rubber seal product, saving $5000+ in product sales
- Designed and validated manufacturing process to create batches military gaskets of up to $50,000 for Staver Hydraulics
- Conducted ASTM D142 Tensile Test to ensure product meet customer quality
- Programmed data searching algorithm to analyze runtime/downtime of company's vulcanizers
- Identify strengths and weakness of newly mechanical splicing to company's traditional splicing process

## PROJECTS

**Undergraduate Research**, January 2021-May 2021 **Clemson, SC**
- Integrate sensor fusion algorithm for navigation of mobile vehicle
- Developed safety stop mechanism on a microcontroller integrated with DIRA Lab's quadruped

## RELEVANT COURSEWORK

**Mechanical Design:** Fundamentals of Machine Design
**Thermodynamics:** Foundation of Thermal and Fluid Systems, Heat Transfer
**Dynamic Controls:** Modern Control, Modeling & Analysis of Dynamic Systems, Classical Controls, Vibrations, Advanced Controls

**Fluid Flow:** Fluid Mechanics, Compressible Flow
**Mathematics:** Linear Algebra, Numerical Methods, Statistical Analysis, Complex Variables

## AWARDS

- President's List (4.0 GPA)
- Dean's List (3.50+ GPA)

## CONFERENCE

**Andrew Zheng**, et al. "Modeling Quadruped Leg Dynamics on Deformable Terrains using Data-driven Koopman Operators". Modeling Estimation and Control Conference, September 2022, Conference Presentation