

Colin Cipolla

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EDUCATION

Northern Arizona University
Bachelor of Science in Mechanical Engineering, Flagstaff, AZ
December 2023

MECHANICAL ENGINEERING EXPERIENCE

Biomechatronic Exoskeleton (Senior Capstone), Fall 2022 – Spring 2023

- Working for the NAU Biomechatronics Lab to create a shoulder Exoskeleton to aid in shoulder movement in the physically impaired
- Collaborating with a team of 4 others to design and manufacture a working prototype that will integrate into an existing design for the Elbow
- Solidworks and Finite Element Analysis of Plastics in the Exoskeleton

Remote Control Broom and Dustpan, Fall 2021

- Designed and manufactured two remote-control vehicles to operate in a confined space and relocate specific objects ranging from a 2kg weight to 5ft pieces of string
- Laser-cut and 3D-printed custom parts required for the design
- Ranked against other teams in a competition and placed 1st

Electric Longboard, Summer 2022

- 3D Modeled, designed, and built an electric longboard from basic components
- Chose gear dimensions, battery size, and motor drivechain

Offroad Vehicle Suspension, Spring 2021

- Designed front suspension system for SAE Baja which improved upon previous years designs from Virginia Tech and Oregon State
- Dealt with Solidworks models and experimented with different suspension types and geometries

Heat Transfer Analysis Project, Spring 2023

- Used Matlab to solve the temperature profile of a 2D system with both simple and complex conditions, and use that temperature profile to predict heat rates across the surfaces

Relevant Courses

Machine Design II: Designed Gearboxes, shafts, and bearings using AGMA standards and Force Analysis

Finite Element Analysis: Analyze different geometries using ANSYS, Galerkin, and FEM

Manufacturing Lab: Used Mill and Lathe to manufacture parts for a C-Clamp within specific tolerances

Heat Transfer: Solved conduction, convection, and radiation problems using MATLAB

Computer-Aided Design: Modeled complex assemblies in Solidworks and analyzed parts using simulation

Mechanical Engineering Design: Used different design techniques such as DFMEA and QFD

Work Experience

Northern Arizona University Transit
Student Bus Driver, Lead Flagstaff, AZ
Oct 2020- Present

- Transport Passengers safely between destinations following a predetermined route, manage other student bus drivers, and handle logistics of organization

Activities and Honors

College of Engineering Dean's List, Fall 2019 and Fall 2022
Alpha Lambda Delta Honor Society, Fall 2019- Present
Society of Physics Students, Fall 2019- Spring 2022
American Society of Mechanical Engineers Fall 2020- Present