Joshua Hernandez

Aspiring mechanical engineer currently enrolled at Northern Arizona University. Constantly engaging my critical thinking, active listening, and team collaboration skills to identify solutions to complex problems. Using my dynamic personality and creativity to solve problems, maximize efficiency, and foster a safer society.

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WORK HISTORY

- 2020 Seasonal Employee - Dell'Osso Farms - Customer Service Representative, Conflict Management/Resolution
- 2021 Part-Time Employee - Cinemark Theaters - Cahier, Retail Sales Associate, Customer Service Representative
- 2022 Part-Time Employee - PetSmart - Cashier, Retail Sales Associate, Customer Service Representative, Pet Care Associate
- 2022 - Now - NAU campus shuttle driver (CDL)

EDUCATION

Merrill F. West High School, Tracy, CA

- Graduation year 2021
- Student athlete: Track and Cross County
- Space and Engineering Academy, 2018-2021

Northern Arizona University, Flagstaff, AZ — *Mechanical Engineering, Electrical Engineering minor*

- Mechanical Engineering Undergrad
- Electrical Engineering minor Undergrad
- Current year: Senior

PROJECTS

Competitive School Project — *Project Design and Development Competition designated by GORE*

- *Description*: The company Gore challenged the freshman engineering class of NAU to develop a marketable product with the goal of making household life more sustainable
- Team designed an 'automatic pot stirrer' to improve kitchen efficiency and aid impaired/handicap persons
- Designated the Lead Project Engineer by my peers
    - Lead the group in brainstorming, design, management, production of a prototype, and presentation
- Selected as Top Project; recognized by GORE Executives as well as the President of NAU

Personal Project — *Automotive Racing Simulator* (on going)

- *Objective*: Build a physical driving simulator with functioning components and software interface
- Designed and produced a steering wheel, predals, and shifter using CREO and 3D printing
- Integrated 3D printed components with electronic components
    - Potentiometers were used to mimic pedal position and range of motion
    - Contact points were used to relay gear shift position
    - Servo motor was used to determine steering position/rotation tas well as output force feedback
    - Arduino Controller
- Custom software using C++ programing and an Arduino Controller
- Custom circuitry control board in order to drive motor in desired fashion

Personal Project — *12-Volt Electric Trailer Tug*

- *Objective*: Develop a battery operated tug capable of pushing a 4,000 pound boat and trailer up a 12% grade as a solution to an actual problem; force multiplier by allowing a single person to accomplish a task normally completed by multiple persons.
- Custom design to address unique project parameters
- Optimal design through trial and error
- Metal Frame/Body. Chain Driven Direct Drive Axle. All Electric. Environmentally Friendly.

School Project — *Automatic food delivery drone*

- *Objectrive*: Brainstorm, design, and develop a product
- Designed a low cost food delivery drone capable of flying 50 feet into the air, a range of three miles, and a speed of 20 miles per hour. Capable of carrying a payload of five pounds
- Lead Engineer of a team of six people
- Brainstormed, designed, engineering analysis, stress analysis, cost analysis.
- Worked with a client to best fit his needs for this project
- Drone could automatically take off and land, had a hatch on the top for accessibility, and a battery that can be easily replaced between trips

SKILLS

Microsoft word, excel, PowerPoint

6 years with Creo and OnShape, solidworks

8 years using Arduino and ESP8226

MATLAB

C++

3D Printing

Welding

Soldering/electronics

CDL Certified

Personal Skills

Passionate

Focused

Hardworking

Active Listener

Strategic Thinker

Effective time management

Effective Communication

Classes taken

- **Calculus 1, 2, 3**
- **Physics 1, 2**
- **Engineering statics**
- **Computer science**
- **Engineering design**
- **Engineering dynamics**
- **Engineering mechanics**
- **Engineering design and manufacturing**
- **Material science**
- **Thermodynamics 1 , 2**
- **Fluid mechanics 1,2**
- **Electrical circuits**
- **Machine Design 1**
- **Intro to electronics**
- **Into to logics**
- **Electric Vehicles**