

Bryce Fennell

(928) 607-1252

brycefennell01@gmail.com

EXPERIENCE

Electrical Torque Machines - Internship

May 2022- PRESENT

Developed testing and data acquisition system to acquire motor test data from a dynamometer

Developed magnetic coordinate measurement machine to measure magnetic field density for prototype and production electric motor rotors using Arduino and Python coding languages over serial interface

Designed and built pneumatic press for low force applications in electric motor prototyping and production

Assisted in development of post-production treatment to reduce deformation under thermal loading

Developed pressure casting system and manufacturing procedure for motor research and development

NDA agreements signed surrounding electric motor research and development processes and technologies

Dynamic and Active Systems Laboratory, NAU - Internship

January 2022- PRESENT

Developed custom chassis for wildlife tracking via hex rotor drone

Design optimization with finite element analysis modeling to reduce weight and improve flight time

Developed custom electronics box integrating electromagnetic field shielding, on board computing, data downlink, and flight systems

Training in drone control loop calibration and radio frequency interference monitoring

Bioengineering Devices Laboratory, NAU- Researcher

January 2021- June 2022

Developed a SolidWorks CAD model of the Circle of Willis vasculature to be 3D printed on a multi material printer for cerebral aspiration catheter testing

Developed a flow simulation table for use with a 3D vasculature model for pressure, temperature, and flow monitoring

Contracted to use the flow simulation table to test multiple cerebral aspiration catheters for catheter manufacturers

Received funding from the URDEA grant to lead a team in developing a UV-C surface sterilizer for use on Ingenico card processing machines

Training on SolidWorks, Trios Rheometer, LabVIEW, and GrabCAD software along with fluoroscopy radiation safety training

Skills

Advanced SolidWorks and OnShape CAD Training with project application

Mastercam Mill and Lathe training

Lathe, Mill, and CNC shop certification - Northern Arizona University 2024

Ansys FEA optimization experience and training

MATLAB, Python, and Arduino IDE programming

Microsoft suite training with project application

Awards and Accomplishments

Northern Arizona University cycling club president 2020 to present

Race organizer of the Sunrise Peak Scramble, a USA Cycling National qualification event at the Sunrise Park Resort in Show Low Arizona

Boy Scouts of America Eagle Scout 2019 - Recreated native plant and animal garden at Willow Bend nature conservatory in Flagstaff Arizona

Flagstaff High School Swimming team captain 2017 to 2019

Absolute Bikes Flagstaff – Sales Associate

January 2018 - November 2022

Worked with customers with varying technical knowledge on bikes as a sales associate

Furthered my mechanical aptitude through bike repairs

Developed problem solving and customer service skills

Publications and Patents

Provisional patent filed for a “3D printable monodirectional Tygon tubing connection to aid with in-vitro catheter introduction”

-Invention ID: D2021-0049

Published “Portable UV-C Sterilizer for High Traffic Surface Susceptible to COVID-19 and Other Infectious Agents” as a lead author

EDUCATION

Flagstaff High School

August 2015 - June 2019

Northern Arizona University – Mechanical Engineering

August 2019 – Current (Anticipated Graduation May 2024)

Dean’s list Spring and Fall 2023

Hobbies and Interests

Design and development of custom 4 axis CNC milling machine to produce custom aftermarket bicycle components

SAE Baja vehicle front end sub-team leader - Northern Arizona University ‘23-’24

Volunteer trail builder for Fort Tuthill bike park

Developing mountain bike race team for Northern Arizona University

References

Dr. Tim Becker

-Professor of Practice

Northern Arizona University

Tim.Becker@nau.edu

Dr. Michael Shafer

-Assistant Professor

Northern Arizona University

Michael.Shafer@nau.edu

Tyler Williams

-Director

Electrical Torque Machines

twilliams@etmpower.com

Thomas Janecek

-Engineer

Electrical Torque Machines

tjanecek@etmpower.com