

Duncan C. Frazier

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Education and Honors

George Washington University, School of Engineering and Applied Science
Master of Science, Mechanical and Aerospace Engineering

Washington, D.C.
Fall 2022- Spring 2024

Bucknell University, College of Engineering
Bachelor of Science, Mechanical Engineering

Lewisburg, PA
Fall 2016 - Spring 2020

University of Glasgow
Study Abroad Program with IFSA Butler

Glasgow, Scotland
Spring 2019

University of Maryland
Summer Program

College Park, MD
Summer 2017

Employment

Oak Ridge National Laboratory Manufacturing Demonstration Facility
Summer Intern through the US Department of Energy's EERE Robotics Internship Program

Knoxville, TN
June - August 2023

- Worked with the Metal Big Area Additive Manufacturing team
- Designed an inert gas local shielding device to attach to an arc welding robot and protect sensitive metal welds
- Utilized Solidworks flow simulation to optimize the inert gas coverage provided by the shielding device
- Built and tested a prototype of the local shielding device on stainless steel and titanium welds
- Continued this localized inert gas shielding project as a masters thesis with GWU
 - The prototype resulting from the masters thesis project has a pending patent
- Designed a method to secure plates of different geometries for a novel welding system

PEMDAS Technologies and Innovations
Junior Mechanical Engineer

Niceville, FL
August 2020 - March 2022

- Wrote MATLAB code for dividing test data into flight segments
- Designed an atmospheric sensor air scoop in Solidworks for drones
- Wrote MATLAB code to compare flight data to meteorologic and atmospheric data
- Downsampled flight data and tested various data filters
- Designed new sensor housing in Solidworks for ground based atmospheric sensor
- 3D printed multiple sensor housing prototypes for testing
- Assisted with flight and ground testing of atmospheric sensor equipment
- Created part and assembly drawings for prototype manufacture

US Navy Surface Warfare Research Institute (Carderock)
Naval Research Enterprise Internship Program (NREIP), the Office of Naval Research (ONR)
and American Society for Engineering Education (ASEE)

Bethesda, MD
May - July 2019

- Worked in the department of system technologies.
- Wrote a MATLAB code for merging different sets of confidential data signatures for materials.
- Prepared radar and thermal imaging equipment for off-site tests.
- Built a moving stand for scanning various objects using a LiDAR sensor.
- Wrote a MATLAB code for computing and outputting the LiDAR data on a 3D plot.
- Analyzed the potential of using a LiDAR sensor in measuring wave formations and ship geometries.

May - July 2018

- Worked in thermal imaging department analyzing data from previous testing.
- Repaired and prepared thermal imaging equipment for future off-site tests.
- Tested and refined a MRTD (minimum resolvable temperature difference) experimental procedure - to identify temperature differences seen by a human eye through a thermal imager.
- Created a MATLAB code to read hdf files from NASA satellites that identified cloud properties present over areas of land.

Software Skills

MATLAB, Solidworks (AutoCAD) and Solidworks Flow Simulations, Microsoft Office (Excel, PowerPoint, Word), Labview, Terraterm, C++

Awards

Dean's Scholarship (Bucknell University- Freshman, Sophomore, Junior, Senior years)

Academic Honors Scholarship (Women's Club of Chevy Chase, MD)

Eagle Scout Award (2015)

Dean's List (Bucknell University – Spring of Senior Year)

Volunteer Work

Group Mission Trips:

- Carolina Point, Brevard, NC (2020)
- Elizabethtown, PA (2016)
- Milford Center, OH (2015)

Boy Scouts of America (2012-2016)

Certification

Fundamentals of Engineering Exam