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Felicity Cundiff

Aeronautics & Astronautics

Linkedin
Portfolio
Github

- Aeronautics & Astronautics Engineering, with a focus on coding, embedded systems, and simulation
- Computer languages: MATLAB, Python, C/C++, Arduino Uno, Linux, Java, GO, HTML and CSS
- Software Knowledge: Solidworks, LabView, 3D Printing, Blender, XFOIL , Simulink and ANSYS
- Coursework: See comprehensive breakdown on my LinkedIn

EDUCATION

University of Washington, Seattle, WA Jun. 2022 - Jun. 2024

- Bachelor's of Science in Aeronautics and Astronautics

Pierce Community College, Puyallup, WA Jan. 2020 - Jun. 2022

- Associates of Science, Aerospace Engineering

EXPERIENCE

SPACE Lab: PPT Thrust Stand, **Software Specialist (Python), Seattle, WA** Jan. - Jun. 2024

- Python: nidaqmx & PySerial to record and calibrate deflection, ensuring accuracy within embedded systems
- Embedded serial communication with Arduino UNO using Pytest & PySerial for precise motor control
- SPACE Labs vacuum chambers test PPT thrusters, using an oscilloscope for high-frequency oscillations
- ANSYS/ FEA software to analyze and optimize overall designs for enhanced performance and efficiency
- Collaborated on 3D printing optimization techniques & CNC machining for spacecraft thruster stand design

Nonlinear Dynamics and Control Lab: Blue Origin RPO, **Team Member (Software), Seattle, WA** Jan. - Jun. 2024

- C++ used for autonomous vehicle systems (fixed-wing aircraft, underwater gliders, space launch vehicles)
- Robot arms involving, underwater robots, and autonomous vehicles through embedded systems expertise
- Blender, Python, and C++ utilized for the design of robot arms and underwater robots for overall objectives
- Studied birds, bats, fish, and insects as precise sensing machines in dynamic environments, gaining insight

Cryogenic Boiling, **Purchasing Officer/Heat Transfer expert, Seattle, WA** Mar. - Jun. 2023

- Theoretically calculated properties for enhanced understanding of heat transfer & cooling in liquid nitrogen
- Participated in group-based experimental research to explore and confirm the validity of theoretical findings
- Uncovered: Boiling characteristics, rapid cool-down times, and heat transfer dynamics by immersing aluminum cylinders, along with precise quantitative data on heat transfer during liquid nitrogen quenching

PROJECTS

Aerospace Design - Personal Project, Seattle, WA Dec. 2022 - Present

- CAD & Slicer software were utilized for the 3D printing of designs, development, and construction of airfoils
- ANSYS software to analyze and optimize airfoil designs printed for enhanced performance and efficiency
- Python for structural simulations, parameter definition, model discretization, and stiffness matrix assembly
- Boundary conditions implemented and result visualization to analyze and interpret the simulation outcomes

Incompressible Aerodynamics **- Vortex Panel Project, Seattle, WA** Mar. - Jun. 2023

- MATLAB used to analyze the aerodynamics of 4 airfoils (NACA 0010, NACA 1410, NACA 2410, NACA 6409)
- XFOIL airfoil software to gain valuable insights into the aerodynamic characteristics of the selected airfoils
- Data acquired containing Cl v.s. Cd, Cd versus α, Cm v.s. α, Cl v.s. α, and Cp v.s. x/c for α values of 0, 5, & 10
- Airfoil performance were all compared, this establish a foundation for further analysis and optimization

LEADERSHIP

A&A, Undergraduate Student Advisory Council (uSAC) - Senior Class Rep, Seattle, WA Aug. 2023 - Jun. 2024

- Planning events and improving staff-student communication. Striving to enhance the student experience

NASA ARTEMIS Challenge **- Team Coordinator, Seattle, WA** Jan. - Jun. 2022

- Collaborated closely to meticulously design and 3D print critical parts of the rover, optimizing its design
- CAD and Simulink were skillfully utilized to create highly efficient and innovative components for the project
- Code complications resolved frequently during rover assembly, demonstrating expertise in problem-solving
- Design deficiencies were addressed during assembly, implementing effective solutions for project success

ACHIEVEMENTS & SCHOLARSHIPS

UW: Technical Award for Innovation - SPACE Lab PPT Thrust Stand (Electrical Propulsion) ● NASA Space Grant Consortium 2022 - 2024 ● A&A - Lace Erik Scholarship, Robert Max Reynolds Endowed Scholarship, Joseph F. Sutter Endowed Education ● Boeing Scholarship ● Features: PNAA 2024: Next Generation Workforce Panel Speaker ● Space Grant: Women's History Month ● Pierce College: Dean's list April of 2020 - Jan 2022