JACKSON BUSCH

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EXPERIENCE

Dark Matter In CCDs (DAMIC), CENPA – University of Washington, Seattle, WA

Graduate Master's Student/ Development Assistant — June 2023 – June 2024

- Built image analysis/masking script for use in search for Dark Matter using Skipper Charge-Coupled Devices (CCDs). Took digital images, investigated & corroborated data, and implemented tests for performance.
- Analyzed data using ROOT framework and C++ in a Unix-like environment. Automated examination of multiple directories, each with over 200 FITS image files, extrapolated useful data, and generated plots presented to colleagues.
- Employed data manipulation and analysis techniques. Fit image results to convolved Gaussian/Poisson distribution. Researched CCD physics and delivered paper on findings.

NASA, NASA HQ, Washington D.C. (Virtual/Remote)

Office of the Chief Engineer (OCE) Intern – Systems Security Engineering Team — September 2022 - December 2022

- Task Lead for inspection into the NASA Gateway mission's Systems Security Engineering (SSE) practices and considerations. Conducted several interviews to gather a holistic understanding of the Gateway SSE successes and shortcomings. Produced summarizing report to be used as a future reference in SSE.
- Advised SSE team with creation of monthly webinars delivered regularly to over 100 industry personnel. Supported presentation structure and topic clarity.

Unmanned Aerial Systems @ UCLA (School Club), Los Angeles, CA

Airframe Team Member — December 2018 - June 2020

- Designed, modelled, and manufactured additions to a 5'-span quadrotor drone used in AUVSI SUAS Competition. Developed landing gear on $20 budgetary constraint.
- Team-designed 8'-wingspan, fixed-wing drone from inception to near-completion, with primary work on deployment module and ground vehicle. Reduced volumetric size of previous ground vehicle by over 20%.

EDUCATION

University of Washington, Seattle, WA — June 2024

Master of Science: Physics

Relevant courses: Electromagnetic Theory | Acoustics | Laser Physics | Electrodynamics

University of California, Los Angeles (UCLA), Los Angeles, CA — June 2021

Bachelor of Science: Aerospace Engineering

Relevant courses: Aerospace Structures | Aerodynamics | Object-Oriented Programming | Design-Build-Fly Capstone

SKILLS

Technical Skills: SolidWorks | MATLAB | C++ | ANSYS | CERN ROOT | Python | Linux Environment

Soft Skills: Problem-Solving | Method-Based Thinking | Communication | Adaptability | Technical Writing | Teamwork | Professionalism

PERSONAL INTERESTS

Soccer (15+ years) | Guitar | Astronomy | Travel | Games & Puzzles