Ian Brault

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WORK EXPERIENCE

NASA Jet Propulsion Laboratory

Mars Sample Return, Flight Software Development   June 2025 – Present

- Develop baremetal software in C++ for JPL's next-generation power and thermal control hardware in support of the entry/descent and surface spacecraft
- Create board-support software for Vorago microcontrollers including CPU profile tooling, external memory drivers, and exception handling support
- Contribute to the NASA F-Prime flight software framework and supporting packages

Europa Clipper, Flight Software Development   April 2023 – Jan. 2026

- Developed driver software in C for the science instrument Bulk Data Storage device responsible for executing NAND operations, storing NAND metadata, aggregating instrument health & status, and monitoring critical hardware registers
- Maintained software for the system fault protection engine and dispositioned spacecraft fault responses during mission operations
- Overhauled unit tests to provide more rigorous verification and achieve full code coverage

Europa Clipper, Flight Software Integration & Testing   July 2019 – Jan. 2026

- Developed extensive test suites in Python to validate and verify functional areas including: launch behavior, system fault protection, science instrument Bulk Data Storage NAND device, flight computer filesystem, health service, and system mode configuration
- Developed NAND post-processing scripts for use in development and mission operations
- Supported hardware integration including end-to-end performance testing

Keysight Technologies

Software Engineering Intern   June 2018 – Sept. 2018

- Worked on the Advanced Design System (ADS) software with the Design Flow & Usability team to develop new workspace and design management tools using C++ and Qt

UCLA Hydrogen Engineering Research Consortium

Undergraduate Research Assistant   Sept. 2017 – June 2019

- Created a Python program to find the total annualized cost of hydrogen compression systems

UCLA Campus Events Commission

Project Manager, Full-Stack Developer   Sept. 2017 – June 2019

SKILLS & TECHNOLOGIES

Programming	C, C++, Python, Rust, Swift, TypeScript
Tools	Git, CMake, LLVM, NASA F-Prime, Google Test, Qt, React

EDUCATION

University of California, Los Angeles – B.S. Computer Science and Engineering   Class of 2019