

Sebastian J. Hamel

SFW Engineer, formerly w/ **BLUE ORIGIN** & **NASA**

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Open Source Projects

🔗 NBody-WASM-Sim

GPU-rendered astrophysics simulation in the web browser

[🔗 Demo](#)
[🔗 Repository](#)

- Performant real-time physics in Rust using linear algebra libs and WebGPU- 3.5x faster than Javascript
- Builds and deploys the demo web page automatically using GitHub CI/CD Actions
- Serves as an open-source template to create GPU-accelerated, interactive web apps
- Endorsed by 70+ Rust community members (Github stars)

🔗 Velato

An integration to parse & render animated/reactive UI with Vello

[🔗 Contribution](#)
[🔗 Repository](#)

- A collaboration with engineers from Blue Origin and Google
- Renders the Google Fonts team's Lottie animations
- Provides coverage of the large Lottie spec (an industry standard for interactive animations)

🔗 KubOS-NASA CubeSat Simulator Integration

Simulation support for flight software written in Rust

[🔗 Contribution](#)
[🔗 Repository](#)

- Enables Rust-based flight software (KubOS) to run on NASA's software-simulated CubeSat hardware
- Contains Rust bindings for NASA CubeSat emulation HALs

Career

Software Engineer

Mar 2025 – Present

Amazon Kuiper - Contract

Remote, FL

- Software engineering full stack applications for the Kuiper Government Solutions Missions Ops
- Developed software iteratively with pipelines
- Leveraged CDK to deploy AWS resources
- Verified and validated API changes with unit tests and integration tests
- Navigated AWS console daily to monitor and debug Lambdas and other cloud logs
- Collaborated closely with team member to avoid merge conflicts and ensure smooth deployments

Software Engineer

May 2024 – Dec 2024

Blue Origin - Contract

Blue Origin Rocket Factory, FL

- Software engineering full stack applications for the Enterprise Technology Business Unit with agile practices
- Designed, developed, deployed, and maintained scheduling software for repairing rocket parts in Typescript
- Worked with users and UX designers to gather feedback, iterated on features and deployed to production
- Led and delivered telemetry visualization tools written in Rust for the New Glenn 1 mission
- Utilized open-source Rust crates to aggregate and calculate projected flight paths

Software Engineer

Feb 2022 – May 2024

NASA - COMET, Command & Control

Kennedy Space Center, FL

- Engineered simulation software for NASA's Exploration Ground Systems (EGS) with agile practices

- Developed CI/CD tools on GitLab to accelerate the development process
- Lead team effort on design of Rockwell PLC programming language features in NASA's EGS PLC emulator
- Innovated on Rust desktop applications to manage PLC runtimes for NASA launch console operators
- Completed a 10 week, NASA-sponsored course on leadership and management

Software Engineer

Jun 2020 – Feb 2022

AFIT, Center for Space Research & Assurance

Wright-Patterson AFB, OH

- Lead the effort of onboarding summer interns, creating learning materials on the C language and flight software
- Developed CubeSat flight software in C with NASA's cFS framework and also in Rust with KubOS
- Primary developer of GitHub contributions to an open-source spacecraft flight software framework written in Rust (KubOS)
- Lead the team effort on the design of system mode management software on a CubeSat spacecraft
- Developed CubeSat ground control software which interfaces with databases and TCP/UDP mission communications in Python
- Developed software in Python to automate processes and accelerate CubeSat mission development

Software Engineering Co-op

Jan 2019 – Aug 2019

NASA IV&V

Fairmont, WV

- Contributed to NASA's open-source flight software simulator (NOS3) with upgraded packages and documentation
- Developed Rust bindings to C++ based hardware abstractions layers for NOS3 simulator
- Modeled CubeSat OEM hardware components into C++ emulators running in NOS3

Skills

- ★ **Primary Languages:** Rust, TypeScript, React
- ☆ **Other Languages:** C/C++, Python, Java, GPU Shaders (GLSL, WGSL)
- 🐧 **Platforms:** 🐧 Ubuntu, 🐧 RedHat 8, 🪟 Windows
- git **Tools:** Git, GitLab, Bash, VSCode, Jira
- 🔧 **DevOps:** Terraform, GitLab CI, GitHub Actions, Docker
- ☁️ **Backend:** DynamoDB, GraphQL, AWS

Education

Bachelor of Science, Computer Science & Engineering

Class of 2021

University of Toledo, ABET Accredited

Toledo, OH, USA

- Summa Cum Laude
- 3.97 GPA