Sebastian J. Hamel

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

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Projects

</> NG-1 Broadcast Earth Visualization
🔗 Timestamp
🐙 *Repository*

NG-1 Broadcast Earth Visualization
- Collaborated with UX engineers to bring concepts to life with GPU programming
- Seeked help from other Blue engineers to receive telemetry and sync to visualization

</> NBody-WASM-Sim
🔗 Demo
🐙 *Repository*

GPU-rendered astrophysics simulation in the web browser
- 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
🔗 Contribution
🐙 *Repository*

An integration to parse & render animated/reactive UI with Vello
- Renders the Google Fonts team's Lottie animations
- Provides coverage of the large Lottie spec (an industry standard for interactive animations)

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