Sebastian J. Hamel He/Him SFW Engineer, Formerly W\ BLUE ORIGIN

shamel@blueorigin.com | sebastian-hamel | seabassjh | +1 (330) 280–1852

Open Source Projects

</> NBody-WASM-Sim Demo
GPU-rendered astrophysics simulation in the web browser *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 Contribution
An integration to parse & render animated/reactive UI with Vello *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 Contribution
Simulation support for flight software written in Rust *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 Contractor May 2024 – Present
Blue Origin - Plaster Group *Blue Origin's OLS Facility, FL*

- Software engineering full stack applications for the Enterprise Technology Business Unit
- Worked with users and UX designers to gather feedback, iterated on features and deployed to production
- Led and delivered telemetry and graphical tools for the NG-1 mission broadcast

Software Engineer Feb 2022 – May 2024
NASA - COMET, Command & Control *Kennedy Space Center, FL*

- Software engineering of simulation software for NASA's Exploration Ground Systems (EGS) using agile software practices
- Primary contributor to NASA Class C verified software
- 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
- Collaborated with teammates on technical documents using Windchill software
- 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
- **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