

# Anson Biggs

Aerospace Simulation Software Engineer

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## PROFILE

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Aerospace Simulation Software Engineer with a strong foundation in both aerospace engineering and modern software development. Combines technical proficiency with a passion for pushing the boundaries of space exploration, contributing to humanity's multiplanetary future.

## ENGINEERING EXPERIENCE

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### Aerospace Software Engineer | Blue Origin | Denver, CO | 2023 - Current

- Early hire for the Lunar Permanence Business unit, established to fulfill a \$3.4 billion NASA contract for the Artemis mission to design a human rated lunar lander.
- Key member of the software-in-the-loop (SIL) team that developed a cutting-edge simulation environment for flight software verification. Bridged traditional aerospace methodologies with modern software practices to create a powerful, extensible product. Team operates under Kanban, rapidly delivering the product within an aggressive timeline.
- Collaborate closely with the verification test writing team to ensure SIL capabilities meet test procedure requirements, proactively developing features to address identified roadblocks.
- Technologies used: Python, Pytest, Pandas, NumPy, C++, Docker Compose, Docker Dev Containers, GitLab CI/CD, NASA Trick

### Software Engineer, Advanced Programs | United Launch Alliance | Denver, CO | 2022

- Responsible for writing high fidelity simulation software for verification of next-generation rocket.
- Modernized a legacy monolithic codebase from the 1980s by compiling and removing ~700k lines of unmaintainable FORTRAN and implementing automated linting/analysis.
- Technologies used: C++, gTest, Matlab, FORTRAN, Python, Atlassian Suite, Redhat Linux, Agile

### Technical Lead | Capstone: Spacecraft Detail Design | Prescott, AZ | 2021

- Developed a fully dynamic 6 degree of freedom simulation of a rocket from to simulate a propulsive landing to verify real design. Demonstrated design with test stand using a real thrust vector control mechanism and a solid rocket motor.

### Undergraduate Research Lead | Orbital Debris Classification | Prescott, AZ | 2021

- Utilized machine learning techniques on high-resolution 3D scans of high-velocity impact debris to create an Orbital Debris environmental model. Collaborated with the Dean of Engineering, University Faculty, and peers to conduct comprehensive research. Additionally, undertook a directed study focusing on machine learning strategies for 3D model characterization and high-dimensional data reduction.
- Technologies Used: Rust, Julia, Matlab, LaTeX

### Creator | Simple Stock Bots | Phoenix, AZ | 2018 - 2024

- Developed a stock market bot using Python that delivers information and analysis to group chats with tens of thousands of monthly active users. Developed an abstracted asset API to manage multiple types of assets from various data sources.
- Used CI/CD to automatically build, publish, and deploy latest commits to a Kubernetes Cluster. Canary and stable releases were automatically managed and deployed to users automatically.

## EDUCATION

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### B.S. Aerospace Engineering | Embry-Riddle Aeronautical University | Prescott, AZ | May 2022

Bachelor of Science in Aerospace Engineering (Astronautics Concentration) with a minor in Computer Science

Summer Study Abroad for Mathematics in Iceland, 2018

## SKILLS AND TOOLS

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### Languages and Technologies

Python, C++, Julia, Rust, MATLAB, Simulink, FORTRAN, LaTeX, Regex, Shell, Markdown, Mermaid, Linux, WSL, Docker, Docker Compose, Development Containers, Kubernetes, Serverless, GitLab CI/CD, DataDog, NASA Trick, DDS, MQTT

### Python Libraries

Pytest, Plotly, NumPy, Pandas, Matplotlib, Jupyter, SymPy, Pip, Requests, Serverless, DASK, CUDA, MkDocs, Sphinx