Ayaan Asif

Software Engineer • Scientific Computing • Space-Inspired Builder
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Portfolio & Code: <GitHubPagesURL>

Education

University of Toronto Sept 2022 – Jun 2026
BSc. Computer Science Specialist • Astrophysics Minor
Relevant Coursework: Operating Systems, Systems Programming, Algorithms, Parallel Programming, Computer Graphics, Physics-Based Animation, Data Visualization, Databases, Practical Astronomy, Cosmology, Quantum Physics, Thermal Physics

Experience

AI Trainer — Data Annotation Tech Toronto, ON • Oct 2023 – Present

- Evaluate AI-generated scientific and engineering code in Python, C++, C, JavaScript, and Bash.
- Debug logic, memory behavior, and reasoning across Linux/Ubuntu and sandboxed environments.
- Develop clear technical explanations to improve model accuracy and consistency.

Software/Game Developer — Level 9 Kolkata, India • May 2023 – Jun 2023

- Built physics-driven interaction and AI behavior systems in Unity/C# for a 3D game prototype.

Game Developer — Mayabious Art LLP Kolkata, India • Aug 2021 – Sep 2021

- Developed movement, animation, and interaction systems; integrated custom 3D assets and rigs.

Space & Scientific Computing Projects

Type Ia Supernova Photometry Pipeline • Python, NumPy, Astropy, Photutils

- Processed FITS images to measure brightness changes in a Type Ia supernova.
- Applied WCS transforms, aperture photometry, and basic calibration techniques.
- Built intuition for how raw astronomical data becomes usable signals.

Material & Motion Simulation Experiments • C++, Python, Unity

- Explored deformable bodies, constraints, and motion behavior using FEM/PBD-style prototypes.
- Visualized simulation output in Unity to study stability and timestep behavior.

Scientific Hardware & Spectrometer Prototyping • CAD, 3D Printing, Optics

- Designed and printed scientific assemblies using Onshape and Creality printers.
- Built early versions of a low-cost phone spectrometer and tested simple spectral extraction.
- Learned practical concepts: tolerances, alignment, material behavior, and optical geometry.

Turbine-Based Airflow & Compressor Prototype • Mechanical Design

- Built and iterated on turbine housings and airflow channels using print–test–refine cycles.

Skills

Programming: Python, C++, C, C#, JavaScript, SQL, Bash, R, Assembly, Java, HTML/CSS

Software Engineering: Systems programming, OS fundamentals, debugging, memory behavior, data processing, shell scripting

Scientific Tools: Astropy, Photutils, NumPy, matplotlib, FITS workflows, Jupyter, Conda

Environments: Linux/Ubuntu, Git, Docker, Unity Engine, VS Code

Strengths & Interests: Curiosity-driven learning, astrophysics and cosmology, scientific computing, hands-on experimentation, simulation fundamentals, building tools