Asher Haun

linkedin.com/in/athaun - github.com/athaun - athaun.tech (Portfolio)

EDUCATION

Bachelor of Computer Science — **Summa Cum Laude**
University of Texas Rio Grande Valley — GPA 3.9

SKILLS

- C, C++
- Cuda
- C#
- Java
- Python
- Linux
- Git
- HTML & CSS
- JavaScript, TS
- Unity 3D
- Data Structures and Algorithms
- Agile Methodologies
- Server DevOps
- Graphics programming
- Technical Writing
- Research
- Public Speaking
- Leadership
- Teaching

EXPERIENCE

Software Engineer – Idaho National Laboratory | *Internship*. Summer 2024
- Developed safety-critical software to track nuclear materials supporting nuclear energy research.
- Built complex features, fixed bugs, participated in beta testing, customer support and the application release cycle.
- Employed Ruby on Rails and Typescript with Angular in a split architecture web application.

Software Engineer – UTRGV | *Contract*. 2022-2024
- Architected and developed application designed to enhance progress reports for an unique target-based grading system
- Streamlined experience for both professors and students, saving hundreds of hours each week spent calculating reports manually.
- Used JavaScript, MongoDB, Linux and software engineering practices.
- Responsible for application architecture, design, development, server operation and testing.

Software Engineer – General Motors Financial | *Internship*. Summer 2023
- Developed new reporting system using .NET and SQL automating daily manual processes.
- Built features for credit inquiry application front and back ends using .NET, HTML and CSS.
- Demonstrated leadership within team by facilitating daily SCRUM standups and ceremonies.

Research Assistant – UTRGV | *Volunteer*. 2022-2024
- Developed high performance C++ simulator for self-building fractals in Tile Automata
- Researched computability in Tile Automata (TA) and Chemical Reaction Networks (CRNs).
- Edited and published research articles and posters; presented at symposia and conferences.

Research Apprentice – TCU | *Volunteer*. 2019-2023
- Developed C++ and Nvidia Cuda model to simulate the spread of Influenza within cellular tissue.
- Published findings as first author in the peer-reviewed Journal of Theoretical Biology.
- Used Python, numpy and matplotlib to process and statistically analyze simulation data.
- Presented research findings at the 2021 SIAM Conference on Computational Science and Engineering, presented by invitation to the NSF Inaugural Equity in Engineering Summit.

Full Stack Web Developer | *Paid*. Summer 2022
- Gained comprehensive full-stack web development experience through client projects, utilizing MongoDB, Express, Node.js, and Bootstrap.
- Built custom web applications to meet specific customer requirements, focusing on responsive design and optimal user experience.
- Demonstrated ability to deliver complete solutions from concept to deployment.

PUBLICATIONS

Effect of cellular regeneration and viral transmission mode on viral spread. | Feb 7, 2023
- Journal of Theoretical Biology
- *Asher Haun*, Baylor Fain, Hana Dobrovolny
- https://doi.org/10.1016/j.jtbi.2022.111370
- Primary author, methodology, analysis and code development.

(Preprint) Intrinsic Universality in Seeded Active Tile Self-Assembly
- In review for Symposium on Discrete Algorithms 2025 (SODA)
- Tim Gomez, Elise Grizzell, *Asher Haun*, Ryan Knobel, Tom Peters, Robert Schweller, Tim Wylie
- https://doi.org/10.48550/arXiv.2407.11545
- Author, editing, code development, Figures

PROJECTS

Cuda Influenza Simulation | C++, CUDA, Python, Matplotlib, NumPy, Git
- Developed a GPU-accelerated model simulating viral spread across millions of cells to analyze cellular regeneration effects.
- Presented findings at TCU Student Research Symposium and SIAM Conference; co-authored a peer-reviewed publication.
- GitHub: https://github.com/athaun/cell-regen-influenza-model

Voxel Graphics Engine | C++, BGFX, Graphics Programming, Git
- Designed a high-performance voxel engine optimized for procedurally generated worlds with modifiable terrain.
- GitHub: https://github.com/athaun/voxel-engine

Stellar Assault (Unity Game) | C#, Unity, Git
- Developed a space-based RTS game with strategic defense mechanics using Unity.
- GitHub: https://github.com/athaun/stellar_assault_rts

Azurite Game Engine | Java, LWJGL, Graphics Programming, Team Management, Git
- Led an international team of ten students to develop an open source 2D game engine with rendering, physics, and input systems.
- GitHub: https://github.com/azurite-engine/azurite

Multiplayer Chess Game | Java, Networking, Graphics Programming, Git
- Created a multiplayer chess game using custom networking and graphics rendering.
- GitHub: https://github.com/azurite-engine/Azurite

Multiplayer Snake Game | C++, Networking
- Created a multiplayer snake game using socket-based networking.
- GitHub: https://github.com/athaun/Snake-Terminal-Game