

Aseem Ratha

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With extensive self-directed learning across diverse subjects, I have developed a robust skill set that blends analytical rigor with creative insight. My work spans creating music, films, and artwork, as showcased on aaratha.github.io to developing web and desktop applications, alongside advanced coursework in Math and Physics.

Education

University of Toronto, B.Sc. Honors Physics (May 2025) Sept 2021 – Present

- **Coursework:** Linear Algebra, Vector Calculus, Classical & Quantum Physics, Sociology of Culture and Gender, Theoretical and Practical Training in Cinema Studies

Projects

Fractal Viscous Fingering Physics Research Coursework

- Researched the linear and chaotic patterns formed by inserting air into a viscous substance sandwiched between two disks
- **Tools Used:** ImageJ, Python, MatPlot, NumPy, Pandas, SciPy, LaTeX

Anthropogenic Climate Change Physics Research Coursework

- Used global climate and population data to analyze the anthropogenic origin of climate change, and determine its relationship with population and policy trends
- **Tools Used:** UN and ESSD Datasets, Python, Numpy, Pandas, SciPy, Excel, LaTeX

High-Temperature Superconductors Physics Research Coursework

- Manufactured and analyzed a high-temperature superconducting sample
- **Tools Used:** Chemical Processing Tools, Lock-in Amplifier Circuit, High Impedance Voltmeter, Oscilloscope

Cinebrief: AI Film Education Tool cinebrief.com

- Developed a tool for learning about the context and reception of any film using a large language model
- **Tools Used:** Html, CSS, TypeScript, OpenAI gpt-3.5, TMDP API, LaTeX

2D Video Game (WIP) github.com/corral-game

- Currently developing a 2D video game centered around the interactions between Verlet-simulated physically accurate ropes and particles
- **Tools Used:** Odin Lang, Raylib, Raygui, C-based Core Libraries

Experience

Researcher: Centre for Agriculture and Bioscience International | Bethesda, MD June – Aug 2021

- Worked with managing editor Philippa Benson to research mentorship projects in developing countries
- Worked on a proposal establishing the groundwork for a prospective mentorship program

Website/Graphic Designer: David Krucoff Campaign | Washington, D.C. Jun – Sept 2020

- Designed campaign flyers for DC Delegate candidate David Krucoff and maintained website for Douglass County, MD - 501(c)(4)

Website Developer: Opus Conservatory | Ashburn, VA July 2019 – March 2020

Website Developer: Weinstein Educational Consulting | Washington, D.C. June – Aug 2021

- Worked with dedicated design team to build website for educational consultant Marnie Weinstein

Website Developer: Vic Records | Toronto, ON Jan – May 2024

- Developed modern website and content management system for Vic Records, a club at the University of Toronto.
- **Tools Used:** Html, CSS, Typescript, Astro, Netlify CMS

Skills

Premiere Pro • Davinci Resolve • Photoshop • Ableton Live • Videography • Illustration • Excel • Python • Odin-Lang • JavaScript/TypeScript • ReactJS • VueJS • Astro • Linux Servers/Systems • Game Development