Alexander Wilson

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Education

The University of Texas at Austin　　　　　　　　　　　　　　Expected May 2025
Bachelor of Science in Computational Physics　　　　　　　　　　　　　　*Austin, TX*

- **Elements of Computing Certificate**
- **Relevant Programming Coursework:** Elements of Programming (Python), Elements of Software Design (Python), Elements of Graphics (Java), Elements of Game Development (Godot), Elements of Networking (Python), Intro to Computational Physics (MATLAB)
- **Relevant Math Coursework:** Calculus (I,II,III), Matrices and Matrix Calculations, Probability I, Differential Equations with Linear Algebra
- **Relevant Physics Coursework:** Electronic Techniques

Projects

Graphmatical! ([Game Page](#)) | *GameMaker Studio 2*

- Worked independently to create an educational game that mixes a graphing calculator with a 2D platformer using the GameMaker Studio 2 game engine.
- Implemented a token system with expression trees in GameMaker Language to parse and convert user input into an equation that can be graphed and checked for object collisions.
- Designed to encourage creativity, exploration and problem-solving in math by allowing the user to come up with their own solutions to the infinite problem sets that occur while playing.

Planar Escape ([Game Page](#)) | *GameMaker Studio 2*

- Worked independently to create a game about pushing blocks around to solve puzzles and escape while being chased by a dangerous entity.
- Implemented Box Engine, a particle-based, iterative, impulse-based physics engine made by me specifically for this game.
- Created a level editor that allows for users to create, share and play user-created levels.

Radioactive Waste Training ([Game Page](#)) | *Godot*

- Worked in and helped lead a team of 4 over a semester using agile methodology to develop and produce a top-down action game using the Godot game engine.
- Implemented random level generation by using a variation of the flood fill algorithm that utilizes random indexing into an array of neighbors rather than using a queue.
- Utilized various project management tools such as GitHub and Trello to delegate tasks and keep the team on track for each build deadline.

Technical Skills

Languages: Python (proficient), GML(Expert), Java (prior experience), Lua (prior experience), GDScript (prior experience), MATLAB (prior experience)
Technologies: GameMaker Studio 2, Godot, MATLAB, Visual Studio, GitHub, Latex, PICO-8