# ALEXANDER WANG

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## EDUCATION

**The University of Texas at Austin**, Austin, TX                                  Present – May 2028
*Bachelor of Science, Computer Science,* 3.5 GPA
> Relevant Coursework: Data Structures, Computer Architecture, Operating Systems (in progress)

## PROJECTS

**Parm Package Manager**                                                          July 2025 – Present
*Lead Maintainer*
- Developed & shipped a cross-platform package manager/software installer CLI tool w/ **Go** and cobra CLI.
- Implemented 8 CLI commands across 5 different platforms w/ staged install/update/delete workflows.
- Integrated **GitHub REST API** w/ OAuth2 for authenticated API calls & validated received data w/ SHA256.
- Created weighted scoring heuristic to intelligently select compatible releases based on user's system.
- **Built CI/CD pipelines** with GitHub actions to validate production code, including 100+ testcases and automated releases.

**Fragments PKM**                                                              March 2025 – July 2025
- Built a local-first, cross-platform personal knowledge management backend using **C#/.NET** + Avalonia.
- Implemented a local **SQLite backend** with **Entity Framework Core** with safe concurrent database writes.
- Engineered **prefetch system** for database hydration via async fan-out, greatly reducing runtime latency.

**Physics-based Platformer**                                                              May 2024
*Technical Lead*
- Developed a video game inspired by the game "Jump King" using GDScript and the Godot Game Engine.
- Organized sprint deadlines; coordinated task delegation among the team based on individual strengths.
- Architected custom physics system and player-level interactions, including slope collision behavior, context-based gravity, and momentum conservation.

## EXPERIENCE

**Mathnasium**, Richmond, TX                                                      July 2022 – August 2024
*Math Instructor*
- Mentored 100+ students in a wide range of mathematical concepts up to advanced Algebra/Precalculus.
- Demonstrated leadership and classroom management by redirecting students to minimize disruptions.
- Evaluated student performance and communicated a detailed progress report with areas for improvement.

**MIT Lincoln Laboratory,** Cambridge, MA                                          July 2023 - August 2023
*Engineering Fellow – Beaver Works Summer Institute*
- Collaborated with 3 engineers to **deliver a serious game** evaluating ethical and risk-based decision-making in disaster response and compares human response with artificial intelligence models.
- **Spearheaded a major rewrite** of game rendering and user interface with **Python and TKinter**, adapting a lightweight library to handle complex gameplay systems and logic.
- Performed statistical data analysis on **100,000+ data points** using Pandas, Matplotlib, and NumPy to interpret and compare human and AI playtest results.
- Established a standardized Git-based version control system within an agile environment, improving team collaboration and **increasing productivity by up to 50%.**

## TECHNICAL SKILLS

**SKILLS:** Java, Go, C#, C, Python, Git, TypeScript, Svelte, Arm64 ASM, HTML, CSS/SCSS, Linux, Lua, Vim, REST
**APPLICABLE FIELDS:** Software Engineering, Data Science, DevOps/Dev Tooling, CLI, Application Development