

Daniel Pan

Work Authorization: U.S. Citizen

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About me: denialpan.github.io/portfolio

Education

Georgia Institute of Technology

Computer Science, BS

May 2022 – December 2025

Atlanta, GA

Relevant Coursework: Machine Learning (CS 4641), Artificial Intelligence (CS 3600), Database Systems (CS 4400), Design and Analysis of Algorithms (CS 3510), Data Structures & Algorithms (CS 1332), Computer Organization & Programming (CS 2110), Objects and Design (CS 2340)

Skills

Languages, frameworks, and scripting: Python, C++, Java, Next.JS, C#, SQLite3, WPF, WinForms, .NET, JavaFX, HTML, CSS

Software, libraries, and tools: Visual Studio Code, CLion, IntelliJ, Git, Raylib, Figma, Blender, [HLAE](#), MAGIX Vegas Pro 18

Professional Experience

Airline Tariff Publishing Company (ATPCO) | Angular, Cypress

July 2024 – December 2024

Dulles, VA

Software Engineer Intern

- Gained experience with full-stack technologies, primarily using Angular for frontend development.
- Utilized NgRx for state management to maintain state consistency across application, caching API responses for fast rendering and calls.
- End-to-end testing with Cypress to keep UI components functional and stable for customer release.
- Developed new test cases for incoming data, as well as refactor existing ones to accommodate recent company changes.
- Integrated RESTful APIs with Angular components and NgRx store to deliver reactive and performant user experiences.

Museum of Discovery and Science | C, Unity

November 2019 – May 2021

Ft. Lauderdale, FL

Software Engineer Intern

- Developed an augmented reality application in C to incorporate 3D models into the software.
- Learned fundamentals with basic rigging and working in a novel environment.
- Utilized Autodesk Maya to calibrate, and animate various existing museum exhibits with Unity to sync with foreground.
- Gathered valuable feedback from museum directors, project organizers, and visitors to make changes to improve experience.
- Important advancement for museum visitors and children to receive a more immersive experience at an educational level.

Projects

iOS Tweak for Mobile Apple Devices | Objective-C, Logos

2021 - 2023

- Developed a feature for iOS 12 – 15 to natively cycle through wallpapers instead of just the native static one.
- Used iOS framework [Theos](#) and [headers](#) to hook onto existing classes to modify stock Apple functions.
- Vastly improved handling mobile user events and memory/cache management.
- Created and currently hosting a repository that allows over 1700 downloads for others to install on their devices.
- First major project motivated by creating something usable for others based on a novel idea that Apple implemented years later.
- View and download at <https://github.com/denialpan/DoABarrelWall>.

Minesweeper Machine Learning “Gym” | Raylib, C++

2025 - Present

- Two versions of minesweeper written completely from scratch, complete with proper tile rendering, logic. One for ML, one for players.
- Runs any solver implementations, either algorithmic or agent, with multithreading to decouple rendering and computational logic.
- Supports board generation up to 10000x10000 boards, with culling (frustum) techniques to massively reduce rendering lag
- Goal towards finding fast pseudo “guess-free” board generations, a step forward towards generalizing complex map navigation.
- View at <https://github.com/denialpan/dansweeper-ml> and <https://github.com/denialpan/dansweeper>

Self-hosted Collaborative Storage Solution | React, Next.js, Sqlite3, AWS S3, Tailwind CSS

2024 – Present

- Open-source file collaboration self-hosted application, using AWS S3 as the storage component.
- Features account registering and authentication with JWT tokens, with middleware and CSRF tokens for necessary security.
- Extensive use of the S3 API to handle multi uploading, dynamic file chunking, and deletion, with SSE to communicate data to frontend.
- Useful for personal purposes and internal file storage without exposing to public. Gained thorough understanding of backend and frontend.
- View at <https://github.com/denialpan/s4-shadowplay>

Minecraft Infinite Player Scaling System Mod | Java, [Neoforge](#), [Forge](#), Gradle

2026 - Present

- Introduces a unique player scaling system that allows living entities to scale alongside the player's increasing/decreasing damage output.
- Scaling system based off of online EWMA normalization feedback controller with Gaussian tools to determine player scaling level.
- Infinitely configurable through the plethora of options to fine tune aggressiveness, sampling, leveling bias, entity conditions, etc.
- Customizable through Minecraft's datapack system with [documentation](#) to incorporate third-party mods into utilizing its methods.
- Supports two of the largest modding platforms with code refactoring to account for differences in available APIs.
- View source: <https://github.com/denialpan/danshardermobs>. View download: <https://modrinth.com/mod/dhm>

Keylogger Heatmap Generation / Audio and Video Trimmer | WPF, WinForms, C#, FFmpeg

2024 - 2024

- Experimentation with the Windows program ecosystem and tools with WPF and Winforms.
- Created two individual programs as personal tools to adhere to common Windows program accessibility and proper XAML layouts.
- WPF program that hooks onto system .dlls to track keyboard/mouse activity. Analyzes data to generate 2D Gaussian heatmaps.
- WinForms program to create simple trims to audio and video files with FFmpeg. Further allows options to set audio/video bitrate.
- Imperative that GUIs are organized and responsive, adhering to common Windows programs for a pleasant user experience.
- View at <https://github.com/denialpan/dankeyboard> and <https://github.com/denialpan/danverter>.

Hobbies

3D Blender Cinematics and Video Editing | Blender, Half-Life Advanced Effects, MAGIX Vegas Pro 18

2019 - Present

- Extremely familiar with Vegas Pro 18 and its various shortcuts and settings for quick navigation and a very efficient workflow.
- Capable of creating both simple and complex videos with appropriate amounts of VFX and SFX.
- Use of advanced custom camera tracking with [HLAE](#) to modify field-of-view, depth-of-field, timing, and curving.
- Importing, rigging, modelling, and texturing models into Blender to create a personal distinct style of visuals and movement.