Daniel Pan
Work Authorization: U.S. Citizen (expected graduation Fall 2025)

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Education

Georgia Institute of Technology	**May 2022 - Present**
Computer Science, BS	*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: C++, C#, Python, Next.JS, React.JS, SQlite3, WPF, WinForms, .NET, Java, JavaFX, C, HTML5, CSS
Software, libraries, and tools: Visual Studio, Visual Studio Code, IntelliJ, Git, Raylib, Figma, Blender, HLAE, MAGIX Vegas Pro 18

Professional Experience

Airline Tariff Publishing Company (ATPCO)	**July 2024 – December 2024**
Software Engineer Intern	*Dulles, VA*

- Gained experience with full-stack technologies, primarily using Angular JS for frontend development.
- Utilized NgRx for state management to maintain data consistency across the application.
- End-to-end testing with Cypress to keep UI components functional and stable after changes from company database.
- Developed new test cases for incoming data, as well as refactor existing ones to accommodate recent company changes.

Museum of Discovery and Science	**November 2019 – May 2021**
Software Engineer Intern	*Ft. Lauderdale, FL*

- Developed an augmented reality application in C to incorporate 3D models into the software.
- Utilized Autodesk Maya to model, calibrate, and animate various existing museum exhibits with Unity to sync with foreground.
- Important advancement for visitors and children to receive a more immersive experience at an educational level.

Projects

iOS Tweak for Jailbroken 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.

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

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

Offline Keylogger Heatmap Generation / Audio and Video Trimmer | *WPF, WinForms, C#*	**2024 - Present**

- Created a WPF program to display keyboard and mouse input as a background process.
  - Utilizes low-level hooking onto system .dlls to track user activity.
  - Analyzes mouse data to generate a 2D monitor heatmap, letting the user set the Gaussian smoothing.
  - Renders a custom keyboard and mouse diagram to display usage over time, alongside with tables.
- Created a WinForms program to make simple edits to audio and video files.
  - Trims video files between timestamps set by the user, then converts to either audio or video files.
  - Options to set audio and video bitrate to change file output size.
- 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.

Java and Python Discord Bots | *Python, Java, JavaFX, discord.py (Python Discord API), JDA (Java Discord API),*	**2019 - 2020**

- Several Discord bots to play music in voice channels, send, edit, and delete messages.
- Local database to store images by type, dimensions, and keywords for sorting and retrieval of over 1000+ images.
- View at https://github.com/denialpan/JoeBot and https://github.com/denialpan/danverter-music-bot/.

Hobbies

3D Blender Cinematics and Video Editing | *Blender, Half-Life Advanced Effects*, *MAGIX Vegas Pro 18*	**2019 - 2022**

- 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.
- Skills in node compositing to accentuate details, effects, and lighting to color correct renders.