Shutong Zhang

sz3832@nyu.edu | (646) 387 0806 | Portfolio | GitHub | itch.io

Education

New York University , BS in Computer Science, Minor in Game Design — Sept 2022 – May 2026

- GPA: 3.85/4.0; Dean's List for Academic Year (2022-2025)
- **Core Course:** Data Structures & Algorithms, Machine Learning, Computer Graphics, Game Development, Game Design

Internship

Frontend Development Intern, JD Cloud (Jingdong Cloud), Beijing — July 2024 – Aug 2024

- Participated in the maintenance of JD Cloud Database Console, responsible for migrating Vue2 components to Vue3.
- Implemented new features and collaborated with backend developers for API integration.
- Assisted in standardizing component styles across projects, fixing UI compatibility issues.
- Worked in a team-based Git workflow with feature branches and code reviews.

Game Projects

Mechanical Memory, First-person Narrative Game, Unreal Engine 5, Solo Dev — June 2024 - Mar 2025

- Managed the full development process, including writing the story, planning the level layout, and implementing interactions to create a playable experience.
- Designed linear level flow and narrative pacing by embedding fragmented narration into objects and scene locations, guiding player attention through colors, lighting, and spatial composition.
- Built the object interaction and narrative trigger system in Unreal Blueprints, controlling when and how each narrative fragment is presented.

Coloring, Exploration-based Metroidvania Game, Unity 2D, Solo Dev — Feb 2025 - Sep 2025

- Allowed players to empower themselves by repainting the environment; different ground colors grant different movement abilities and interactions, enabling puzzle-solving and progression.
- Built a shader-based ink system with real-time painting, overcoming tilemap constraints and enabling more dynamic level repainting.
- Optimized GPU-to-CPU readback by implementing regional ink masks, improving performance.

404 NOT FOUND, Puzzle Game, Unity 2D, Solo Dev — June 2025 - Oct 2025

- Designed and developed a meta-narrative puzzle game that begins as a traditional word search and gradually shifts into experimental mechanics across 10 levels.
- Implemented a configurable word search engine with procedural grid generation, manual word placement, random filler letters, and real-time selection validation. Applied object-oriented design to separate core grid logic from level-specific rules, enabling scalable puzzle variations.

Technical Projects

Parallel Run-Length Encoder, Multithreaded Data Compression — Oct 2023 - Nov 2023

- Implemented a multithreaded Run-Length Encoding algorithm using a custom thread pool for parallel data compression.
- Applied mutexes and condition variables to manage thread synchronization and safe access to shared buffers.

Anime Tracking Assistant, Full-Stack Web Application — Apr 2024 - May 2024

- Developed a web platform that allows users to track anime release schedules and join community discussions, providing a complete full-stack solution.
- Built the backend with Node.js and Express to handle data access, authentication, and server-side logic, using MongoDB to manage user and anime data.

- Implemented interactive features using JavaScript, HTML, and CSS with AJAX for asynchronous data updates, and designed a responsive UI with the Bootstrap framework.

Music Genre Classification, Machine Learning Capstone Project Apr 2025 - May 2025

- Preprocessed and standardized an audio feature dataset, encoding categorical variables and removing redundant attributes for consistency.
- Applied PCA to reduce feature dimensionality and improve neural network efficiency; visualized clusters using t-SNE and UMAP.
- Built and trained a feedforward neural network for 10-class genre classification, achieving nearly four times higher accuracy than random guessing and an AUC of 0.84, with strong performance on Classical and Hip-Hop categories.

Game Jams & Competitions

Mathematical Contest in Modeling, MCM 2024 Feb 2024

Developed regression-based optimization models under time constraints; gained experience in mathematical reasoning, teamwork, and technical writing.

Cat Office,Global Game Jam 2024 Feb 2024

Built item interaction, dialogue, and inventory systems for a 2D escape-room style game, collaborating with a small team.

Bupuda, Global Game Jam 2025 Feb 2025

Developed a physics-based 2D game controlled by real breathing input through a humidity sensor. Implemented sensor integration and designed levels where players guide a fragile bubble carrying a princess through obstacles.

Skills

Programming: Java, C, C#, C++, Python, JavaScript (HTML5, CSS3, Node.js, Express, MongoDB, React, Vue2/3)

Game Engines: Unity, Unreal Engine 5, GameMaker

Tools: Blender (3D modeling), Figma (UI/UX design), Git (version control)

Data and Analysis: Python for data processing, visualization, and applying statistical/machine learning methods