Chak Shun (Andy) Pang

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EDUCATION

Aug 2021 — Present

Bachelor of Arts, Cornell University

- **Major:** Computer Science
- **Minor:** Game Design
- **Clubs:** Development in Games Association, Cornell University Mixed Reality
- **Relevant Coursework:** Introduction to Computer Graphics, Introduction to Game Development, Foundations of Artificial Intelligence, Computer Systems Organization, Algorithms & Data Structures, Functional Programming, Discrete Mathematics, Object-Oriented Programming, Linear Algebra, Multivariable Calculus

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PERSONAL PROJECTS

Oct 2024 — Oct 2024

PolyGone
Ludum Dare 56

- Developed a 3D action-stealth game in Unity within 72 hours, collaborated with a team of six to address the theme "Tiny Creatures".
- Implemented a comprehensive Finite State Machine (FSM) to ensure seamless action and animation transitions for player and enemy characters.
- Engineered a robust combat and stealth system, encouraging diverse player strategies and enhancing gameplay depth.

Sep 2024 — Dec 2024

The Interrogation
Coursework Film Project

- Directed a short student film focused on themes of trust, relationships, and progressive mental breakdown, overseeing all stages from concept development through final editing
- Collaborated with a team to design and execute scenes inspired by "The Dark Knight", Inglourious Basterds", and "The Silence of the Lambs", focusing on psychological tension through lighting, framing, and sound design
- Led on-set coordination with actors and crew, completing all footage in 20 hours over 2 days, followed by 3 weeks of editing to deliver rough, fine, and final cuts for a Kiplinger Theater premiere

Aug 2024 — Dec 2024

Coursework Graphics
Project

Flight Sim

- Developed 3D world terrains, clouds, and vegetation, creating an expansive plane for players to explore, enhancing the immersive experience.
- Implemented procedural terrain generation using Perlin Noise functions to create customizable meshes, allowing flexible parameter adjustments to modify terrain appearance and complexity.
- Programmed procedural vegetation and terrain features, dynamically spawning trees, foliage, and other elements to boost realism and immersion in the game environment.

Aug 2024 — Aug 2024

ALICE alice
GMTK 2024

- Developed a 2D platformer in Unity within 96 hours for the GMTK 2024 Game Jam, collaborating with a team of seven to address the theme "Built to Scale".
- Designed intricate levels and core gameplay mechanics centered on the concept of scaling, creating an immersive world inspired by *Alice in Wonderland*, while integrating narrative elements aligned with the theme.
- Implemented key systems, including player and NPC movement, a universal scaling system, audio, and UI interactions, ensuring seamless integration across all components for a cohesive user experience.

| Jul 2024 — Jul 2024 | **Second Species** | CiGA 2024 |

- Developed a 2.5D puzzle-solving platformer in Unity within 48 hours, winning 1st place in a game jam with a team of six, centered on the theme "Limited and Limitless".
- Implemented various classes of interactive objects, enabling dynamic player interaction with the environment to solve complex puzzles.
- Designed and built levels using custom assets created by the art team, ensuring seamless integration of gameplay mechanics and visuals.

| Apr 2024 — Present | **Hiraishin** | Independent Game Project |

- Initiated the development of a 3D first-person action game in Unity, featuring advanced space-time manipulation mechanics like teleportation and bullet time to enhance player abilities.
- Designed complex, scalable levels with progressive difficulty, integrating adaptive enemy AI that dynamically responds to player actions, encouraging diverse strategies for environment traversal.
- Engineered the gameplay system using techniques such as Procedural Animation, State Machines, and AI Pathfinding. Applied object-oriented programming principles in C# to manage game logic, and interaction systems, and optimize performance for smooth gameplay across different hardware configurations.

| Apr 2024 — Apr 2024 | **Back to Life** | Ludum Dare 55 |

- Collaborated with a team of three to develop a 3D puzzle exploration game in Unity within 72 hours for Ludum Dare 55 Game Jam, themed "Summoning".
- Engineered complex puzzle mechanics, inspired by *Return of the Obra Dinn*, involving dynamic object interactions and dialogue reconstruction to solve mysteries.
- Designed an advanced unlockable system using randomized algorithms and object state management, ensuring smooth progression and preventing gameplay soft locks.

| Jan 2024 — May 2024 | **Everlast** | Coursework Game Project |

- Led a team of four programmers within a group of seven to develop a 2D speed-running game using the LibGDX framework.
- Designed the software architecture following Object-Oriented Programming (OOP) principles for scalable and maintainable code.
- Developed core features, including an advanced AI system, customizable audio, a responsive player controller, and a dynamic level generation system using Tiled.

| Jan 2024 — Jan 2024 | **Kuso Neko** | Global Game Jam 2024 |

- Developed a 2D side-scrolling infinite runner game using Unity within 72 hours, collaborating closely with a small team of three to execute core gameplay mechanics under tight constraints.
- Engineered a procedural generation system for dynamic obstacles and collectible food items, ensuring replayability and a unique player experience in every run.
- Conceptualized and implemented a Hunger management system, where players must balance resource consumption to maintain optimal performance, introducing strategic decision-making by requiring players to stay agile while avoiding exhaustion and enemy threats.

| Sep 2023 — Oct 2023 | **Glutton-Free** | Ludum Dare 54 |

- Secured a top 20 popularity ranking, developing a widely acclaimed game within 72 hours with a team of three, centered around the theme "Limited Space".
- Engineered the soft body physics system utilizing 2D bone rigging, significantly enhancing the gameplay dynamics and player immersion.
- Designed the tutorialization of game mechanics, obstacles, and objectives in a clear, engaging, and accessible manner, enhancing player onboarding and overall enjoyment.

Oct 2022 — Dec 2022

Lumiere

Independent iOS App
Project

- Developed an iOS tracker app for logging, commenting, and organizing watched movies and future watchlists.
- Achieved rapid user adoption, processing over 1,000 database read/write requests within the first two days of launching on the App Store.
- Implemented a robust email authentication system using FirebaseAuth and securely managed data storage with Firestore, ensuring scalability and user data protection.

WORK EXPERIENCE

Jan 2024 — Present

Undergraduate Teaching Assistant, Cornell University

- Provided academic support during office hours (1-2 hrs/week), offering expert guidance on complex course material and assignments to enhance student understanding.
- Collaborated with faculty and peers in weekly grading sessions (3-5 hrs/week) to ensure fair and accurate evaluation of student work.
- Mentored students on final projects, offering feedback and assessing deliverables (1-2 hrs/week in the second half of the semester) to promote high standards of technical and conceptual achievement.

Mar 2023 — Jan 2024

Co-Founder, TechCafe

- Led a collaborative project to develop an NFC-based web service that enabled seamless menu interaction for customers across Japan.
- Designed and implemented the user interface using ReactJS and Bootstrap, ensuring an intuitive, responsive, and mobile-friendly experience.
- Integrated the Stripe API for secure, streamlined payments, established connectivity with NFC tags, and utilized Firebase for efficient data storage, along with Socket.io for real-time communication.

SKILLS

Languages: C#, C++, JavaScript, Python, Java, Swift, C, OCaml, HTML, CSS

Engines & Frameworks: Unity, Unreal Engine, LibGDX

Databases: Firebase, MongoDB, MySQL, SQLite

Development Tools: Git, Bash, Unix/Linux