PINCUN LIU

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Graphics Engineer | Game Engineer | Technical Designer

EDUCATION

Stanford University — Stanford, CA
Master of Science in Computer Science — 2025 – 2027

New York University — New York, NY
Bachelor's Degree in Computer Science and Game Design — 2021 – 2025
Cumulative GPA: 3.94, Major GPA: 4.00

PROFESSIONAL EXPERIENCE

Silverjay Studio — New York, NY
Founder, Director, Lead Engineer — Sep. 2021 – Present

- Founded a startup game studio in New York in 2021, recruited and led a team of 22, and developed 5 independent games showcased in major events and competitions internationally. (https://www.silverjaystudio.com/en)
- Received 4 national awards and 8 award nominations as of Dec. 2024.
- Developed and refined mature technical and management skills for team collaboration. Developed a professional software framework SKCell (https://github.com/Skyrim07/SKCell) with 120+ GitHub stars.

Hypergryph Inc. — Shanghai, China
Game Engineer Intern — May 2024 – Aug. 2024

- Designed and implemented 3 gameplay systems from scratch using Unity, C#, and Lua, including the water cycle system, the breakable object system, and the character navigation system.
- Researched and implemented algorithms for geometric procedural generation, such as concave polygon generation, mesh collider subdivision, etc. The results were presented in the company's internal lecture series in August 2024.
- Performed in-depth conversations across the art, design, and development departments. Converted 5+ initial ideas to completed production pipelines in use.

Gameloft Inc. — Remote
Software and Graphics Engineer Intern — May 2022 – Aug. 2022

- Developed NPR and PBR shaders for character and environment rendering using HLSL.
- Implemented character movement and combat behavior using behavior trees and goal-oriented programming.
- Developed in-editor Finite State Machine tool for character animation, deployed to 3+ other projects in the company.

NetEase Inc. — Hangzhou, China
Game Engineer Intern — Jul. 2020 – Nov. 2020

- Researched and implemented soft-body physics for cloth rendering based on mass-spring systems and compute shaders.
- Optimized game logic and rendering efficiency by a maximum of 14% using RenderDoc and the Unity profiler.

RESEARCH EXPERIENCE

NYU Future Reality Lab — New York, NY
Research Assistant, Supervised by Prof. Ken Perlin — Oct. 2023 – Present

- Initiated and participated in 4+ research projects in Computer Graphics and human-computer Interaction. Project "A Collaborative Multimodal XR Physical Design Environment" accepted to SIGGRAPH Asia 2024; full paper "A Survey on Audio-influenced Pseudo-Haptics: Methods, Applications, and Opportunities" submitted to CHI 2025.
- Contributed extensively to three NSF Grant Proposals for co-located collaborative mixed-reality research.
- Developed a WebXR-based collaborative mixed reality platform with a customized rendering pipeline and multimodal interfaces, deployed in research projects and graduate-level VR courses at NYU and KAIST.

NYU Courant Institute of Mathematical Sciences — New York, NY
Research Assistant, Supervised by Prof. Gizem Kayar — Jun. 2023 – Present

- Led a research project on a new Machine-Learning-Based method in Smooth Particle Hydrodynamics that learns from the data of the first frames. Researched and developed a framework using Unity, Qt, C#, C++, and Python. We aim to submit this project to SIGGRAPH 2025.
- Led a research group of 4 people on a project regarding Computer Graphics education. Researched and developed an application for students to learn the material interactively. The resulting application was distributed to 100+ students in the undergraduate Computer Graphics course starting from Spring 2024.

NYU High-Speed Research Network — New York, NY
Research Assistant, Supervised by Prof. Robert Pahle — Dec. 2023 – May 2024

- Researched and developed techniques for synchronization and distribution of real-time motion capture data across Unreal, Unity, and WebXR clients using C++, C#, and JavaScript.

TEACHING EXPERIENCE

NYU University Learning Center New York, NY
Learning Assistant Sep. 2024 – Present

- Courses: MATHUA-123,140 Calculus III, Linear Algebra; CSCIUA-310 Basic Algorithms
- Held three 120-minute sessions every week for focused one-on-one tutoring.

NYU Courant Institute of Mathematical Sciences New York, NY
Teaching Assistant, Supervised by Prof. Michael Walfish Sep. 2024 – Present

- Course: CSCIUA-202 Operating Systems
- Led a 75-minute recitation lecture three times a semester, hosted a 120-minute office hour every week, responsible for grading 2 major assignments, 2 minor homework, and the midterm & final exams.

NYU Courant Institute of Mathematical Sciences New York, NY
Grader and Tutor, Supervised by Prof. Gizem Kayar Jan. 2024 – May 2024

- Course: CSCIUA-480 Computer Graphics
- Led 150-minute office hours twice a week, responsible for grading all assignments and quizzes for the course.

NYU Tisch School of the Arts New York, NY
Teaching Assistant, Supervised by Prof. Karina Popp Sep. 2023 – Dec. 2023

- Course: GAMESUT-121 Intermediate Game Development
- Led in-class discussion sessions twice a week, responsible for grading all the assignments and game projects for the course.

Bilibili.com / Youtube.com Online
Online Instructor Jan. 2023 – May 2024

- Self-designed and taught 45 video courses (~75 hrs) on game development and computer graphics. (https://www.alexliugames.com/courses); Received 300k+ views, 9k+ students, and 18k+ likes as of Dec. 2024.

PUBLICATIONS

Keru Wang, **Pincun Liu**, Yushen Hu, Xiaoan Liu, Zhu Wang, and Ken Perlin. (2024). A Collaborative Multimodal XR Physical Design Environment. In *SIGGRAPH Asia 2024 XR*.
Keru Wang, Yi Wu, **Pincun Liu**, Zhu Wang, Agnieszka Roginska, Qi Sun, and Ken Perlin. (2024). A Survey on Audio-influenced Pseudo-Haptics: Methods, Applications, and Opportunities. In *Proceedings of the CHI Conference on Human Factors in Computing Systems* (pp. 1-25). (In submission)

HONORS & AWARDS

Best Game Grand Award, 4th China University Student Game Awards *(1st place/2000+ competitors)* 2024
Best Student Game Award, IndiePlay - China Indie Game Awards 2024 *(3rd place/3000+ competitors)* 2024
Excellence Award, Tencent Game Awards 2024 2024
Best Narrative Award Nomination, 4th China University Student Game Awards 2024
NYU Dean's Undergraduate Research Fund, Conference Grant ($1,000) 2024
Best Overall, Global Game Jam 2023 New York *(1st place/60+ competitors)* 2023
Best Overall, Global Game Jam 2022 New York *(1st place/50+ competitors)* 2022
Best Visual Award Nomination, 2nd China University Student Game Awards 2022
Best Overall, Global Game Jam 2021 Shanghai *(1st place/60+ competitors)* 2021
Best Student Game Honorable Mention, Independent Game Festival 2021 2021
Best Technology Award, NetEase MiniGame Challenge 2020
Best Visuals Award, NetEase MiniGame Challenge 2020
Best Student Game Nomination, IndiePlay - China Indie Game Awards 2020 2020
Excellent Student Game Award, 2nd China Art Games Competition 2020
Gold Award, China Academy of Art "LinFengMian" Awards 2020

SKILLS

Software and Game Development: C#, C++, C, Unity, Java, JavaScript, x86-64 Assembly, PyTorch3D, ImGui, Qt, VR/AR, WebXR
Graphics Development: CG, GLSL, HLSL, OpenGL, WebGL, linear algebra, procedural generation, physics simulation
Collaboration: Git, Perforce, SVN, Redmine

LANGUAGES

Mandarin: Native Proficiency **English:** Professional Proficiency **Japanese:** Conversational Proficiency