Jiawei Liu

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Skills

- Python | C | JavaScript | CSS | Bootstrap | HTML | Git | Pygame | RNN | LSTM | Figma | OOP | UI/UX | Game Development | Web Development
- Signals | MATLAB | DAW | Max for Live | Music Generation | Guitar Performance | Audio Recording | Audio Mixing & Mastering
- English, Chinese – *Native proficiency* | Korean – *Limited Working Proficiency*

Education

Bachelor of Science — **Carnegie Mellon University** — *Pittsburgh, PA, USA* — **08/2023 - Current**

- Major in Music and Technology
- (Planning) BESA in ECE and Music Tech
- (Planning) Additional major in EDIE

International Baccalaureate Diploma — **Dwight School Seoul** — *Seoul, South Korea* — **08/2020 - 05/2023**

- High Level Courses: Physics, Psychology, Music
- Written research paper about the bahavior of strings on instruments (link)
- Written research paper on music theory analysis (link)
- Written research paper on mathematical models for golf simulation (link)

Projects

Intergram (Google Colab) (Presentation) — *Pittsburgh, PA, USA* — **03/2024**

- Led a team of four in the GenAI Hackathon sponsored by Google at the Tepper School of Business, serving as the team leader and primary developer. Developed a demo of the pipeline in Python, showcasing the core functionality of the project. Our team secured an honorable mention, placing in the top 4 out of 26 participating teams. The project, named Intergram, is an online multi-lingual texting platform that enables users to seamlessly connect with one and another using their preferred language.

CMUapartment.com (link) (Github) — *Pittsburgh, PA, USA* — **01/2024**

- Led a team of three in the development of a dynamic website during a 24-hour hackathon, serving as the primary developer and project leader. The website, built using HTML, CSS, and JavaScript, aims to assist Carnegie Mellon University students in finding the most suitable off-campus housing based on various student priorities. The key feature is a dynamically updating ranking system that adapts to user input, providing personalized housing recommendations.

112 Aim Trainer (Github) — *Pittsburgh, PA, USA* — **11/2023**

- Developed a game over 3 weeks, entirely coded in Python with a graphics library similar to Pygame. The project comprises approximately 1,000 lines of code, taking an Object-Oriented Programming (OOP) approach. Key features include a simple 3D engine created using 2D graphics, implementation of hitbox mechanics, an engaging User Interface and User Experience (UI/UX), and fundamental game audio elements.

Research

Automobile Active Noise Cancellation System — *Pittsburgh, PA, USA* — **10/2024 - Current**

- This research aims to develop an optimized Automobile Active Noise Cancellation (ANC) system that enhances passenger comfort by reducing cabin noise levels. The study will focus on leveraging advanced signal processing techniques, sensor technologies, and adaptive algorithms to improve the system's performance across various driving conditions. Currently looking for advisor and team members to join.

Music Generation with Recurrent Neural Networks (link) — *Seoul, South Korea* — **06/2022 - 12/2022**

- Advised by CMU PhD and current Bloomberg AI Research Scientist Yong Zhuang, I trained an RNN model with LSTM architecture to generate music. The model learns from an extensive dataset of musical notations to predict subsequent notes in a composition. This research demonstrates the potential of Deep Learning in generating novel musical sequences and highlights the application of AI in creative domains.

Others

- **Badminton Player**: Currently playing for Carnegie Mellon's competitive badminton team while also serving as the finance chair.