Ryan Zhang

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EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Bachelor of Science in Computer Science and Audio Engineering — *Aug. 2024 – May 2028*
Dean's List

Relevant Coursework: Discrete Math, Imperative Programming, Electrical/Computer Engineering, Functional Programming, Linear Algebra, Multivariable Calculus, Music Theory, Audio Engineering, Music Technology

Thomas Jefferson High School for Science and Technology — Alexandria, VA
High School Diploma — *Aug. 2020 – June 2024*
Relevant Coursework: Artificial Intelligence, Computer Vision, AP Music Theory

SKILLS

Music Software: FL Studio, Pro Tools, Musescore
Languages: Python, C, Javascript, R, MATLAB, Java, C++
Technologies/Other: Github, MIDI, Electrical Engineering, FMOD, Unreal Engine, TensorFlow, Numpy, Audio/Sound Design, Music Composition, Music Production, Sound Recording, Microsoft Office
Hobbies/Interests: Jazz Improvisation, Biking, Lord of the Rings, Art History

EXPERIENCE

Open Source Python Developer — June 2025 – Present
AMADS — *Remote*
- Worked on the premier Python package for symbolic music analysis
- Implemented music analysis algorithms to analyze musical features/elements of music files
- Translated MATLAB algorithms to Python
- Collaborated with professors and students across the world

Game Audio Intern — June 2025 – Present
Tanbii — *Remote*
- Created original game soundtrack and SFX for sustainability video game startup
- Collaborated with developers to implement audio in the game environment using middleware

Audio/Video Engineer and Recital Crew — February 2025 – Present
Carnegie Mellon School of Music — *Pittsburgh, PA*
- Setup audio/visual equipment for CMU School of Music concerts and events
- Ensured high quality live audio and visual recordings of events
- Applied audio engineering knowledge in a live setting

Sound Designer — October 2024 – Present
Lunar Gala — *Pittsburgh, PA*
- Worked on the largest fashion show in Pittsburgh
- Produced model walkout music/sound using FL Studio and a variety of VSTs
- Collaborated with fashion designers to achieve a shared creative vision

PROJECTS/WORKS

3rd Overall Place Hackathon Project: Hand Music | *Javascript, Mediapipe* — February 2025
- 3rd overall place at CMU's Tartan Hacks, the largest hackathon in Pittsburgh
- Utilized Google Mediapipe hand landmark detection to capture hand gestures
- Implemented customizable scale selection with automatic chord harmonizer based on hand motions
- Added instrument effect parameters that change with specified hand gestures

Emotion Detection Piano Visualizer | *Python, TensorFlow, MIDI* — August 2023 – June 2024
- Analyzed MIDI data from MIDI device/MIDI file to generate visuals using PyGame library
- Implemented computer vision and neural network to track face and assess facial emotion to control color
- Selected to present at TJ Alumni Day where 50+ alumni attended