Will Rinkoff

will.rinkoff@gmail.com +1 651-280-9119

Education

- **California Institute of the Arts** *Masters of Music Technology*
  - Audio/Video AI Pipelines, Music Information Retrieval, Neural Audio Synthesis, Interface Design, Audiovisual installations
- **Carnegie Mellon University** *Bachelor of Computer Science and Music Technology*
  - Algorithms, Low Level Computer Systems, Linear Algebra, Digital Signal Processing, Machine Learning, QA, Audiovisual Composition, Experimental Data Capture

Skills

Linux: 5+ years daily use, regularly assisted/debugged the systems of my peers
Languages: Javascript/Typescript, Python, C/C++, Java, Lua, Haskell, Rust, Bash
Frameworks: React, Vue.js, Node.js, Docker, Firebase, Amazon Web Services, Pandas
Environments: Comfy UI, Max/MSP, Touchdesigner, Ableton, Unreal, Unity, Adobe Suite
Areas of Interest: Digital/Accessible tools for live performance, Audio-Visual Installations, Interaction Design

Experience

- **The Builders Association (Award Winning Theater Company)** *May-October 2024*
  Fullstack Developer New York City
  - Architected and implemented a Twitter clone using React.js and Firebase for a live theatrical production
  - Developed a robust event-driven cueing system for interactive audio-visual content during the performance
  - Collaborated with directors in an agile environment to deliver features under strict production deadlines
- **Penrose** *Febuary-July 2021*
  Software Engineer Pittsburgh, PA
  - Enhanced functionality of a React-based mathematics visualization platform with new interactive features
  - Designed and implemented user interfaces for a domain-specific language following modern UX principles
  - Engineered critical components of the compilation pipeline that transforms user code into SVG diagrams
- **Neort.io** *July-August 2020*
  Frontend Developer Tokyo, Japan (Remote)
  - Led end-to-end development of a high-impact feature from concept to production deployment within one month
  - Implemented a GLSL texture management system using Vue.js, WebGL, and RESTful API integration via Axios
  - Maintained effective cross-cultural communication with international development team across time zones
- **Resonant Cavity** *May-August 2019*
  Audio Processing / Machine Learning Intern Minneapolis MN
  - Developed Python-based tools for audio analysis and synthesis utilizing Keras deep learning framework
  - Implemented and optimized neural network architectures for vocal analysis and synthesis applications
  - Created comprehensive technical documentation for proprietary software tools and workflows

Selected Projects

- **lua_tidavim** *Laptop Performance Interface*
  - Engineered a dynamic performance interface for the Tidalcycles sequencing language with real-time feedback
  - Received international recognition for innovative approach to human-computer interaction, resulting in invitations to arts technology conferences across the US, Europe, and Asia
  - Technologies used: Neovim, Lua, Tidalcycles, Supercollider, and Docker for cross-platform compatibility
- **'Look Closely'** *Web-Based Experimental Installation Work*
  - Developed a web-based interactive installation utilizing iris tracking for audio synthesis control with reactive Three.js/WebGL visualizations
  - Architected a modular system for creating high-performance web-based instruments using computer vision and gesture recognition
  - Technologies used: Three.js, WebAssembly, Faust Audio, MediaPipe, HTML/JavaScript framework
- **Lissajous A/V Synth** *Software Audio Synthesizer*
  - Designed and implemented a real-time audio synthesis pipeline that transforms video data into audio signals
  - Technologies used: Python, Pandas, XServer, C, FFmpeg, OBS

Recognition

- **International Conference on Live Coding**
  Utrecht (Netherlands) 2023 , Shanghai (China) 2024
- **Grants** *BXA Grant (*2), CFA Grant, Undergraduate Research Grant, School of Music Travel Grant*