Xiaoxuan *(Andrina)* Zhang

Languages: English(Fluent), Chinese (Fluent) and French (Intermediate)
Eligible to work for any U.S. employer | Willing to relocate and travel
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https://andrinazxx.github.io/

I am an energetic engineer and computing artist. I create engineering projects with my artistic and aesthetic expression. I create interactive software system / installation as well as produce electronic music. I look forward to transforming avant-garde technological ideas into the real world by contributing my interdisciplinary background to my future team.

EDUCATION

University of California – San Diego   *September 2020 - June 2024*
B.S. Cognitive Science specialized in Machine Learning & Neural Computation   Overall GPA: 3.84
B.A. Interdisciplinary Computing and the Arts - Computer Music & Music Technology   Major GPA: 4.0
Minor in Computer Science & Engineering

WORK EXPERIENCE

Software Research Engineer – Massachusetts Institute of Technology - Media Lab   *October 2025 – Present*
- Building a multi-channel real-time spatial audio software system for Boston Symphony Orchestra.
- Designing and building a multimodal AI interactive pattern generation system for a top luxury fashion brand.

Software Engineer Co-op – Bose Corporation, Framingham, MA   *July 2024 – September 2025*
- Performed data wrangling and analysis on audio machine learning models for consumer products.
- Collected acoustic data in test rooms and designed protocols to ensure high-quality datasets for validation.
- Built distributed systems for home theater devices using Python, adb, and Linux.
- Implemented STM32 prototypes with C / FreeRTOS; validated results via oscilloscope testing.
- Used Confluence / Jira to track work and coordinate between research and product teams.

Software Research Intern – Massachusetts Institute of Technology - Media Lab   *November 2024 – March 2025*
- Created Max/MSP software Interface with Flask API to build web audio software with Python. (contract)

Research Software Engineer Intern – Qualcomm Institute, San Diego, CA   *July 2023 – June 2024*
Sonic Arts Research & Development – Audio Spatialization Lab
- Developed a real-time beamforming system in Pure Data with a custom C++ plugin, achieving 11 ms latency; scaled and validated on a 62-speaker, 4m wavefield synthesis setup.
- Integrated Kinect V2 depth sensing for real-time, user-tracked beam steering, modularizing the sensor pipeline for interactive installations.
- Built Python web scrapers to collect HRTF datasets; performed MATLAB-based spatial audio analysis.

Product Designer – Machani Robotics, San Diego, CA   *January 2024 – April 2024*
- Spearheaded and designed the product launch of an embodied AI robot to improve accessibility to quality mental health aid among students in a chain of universities.

SELECTED PROJECTS

View the full set of projects: https://andrinazxx.github.io/portfolio.html

Music Genre Classification with kNN, SVM, CNN and RNN implementation [Link]
- Led a team of 5. Organized the meetings and frequently met the professor and the teaching assistants.
- Applied Exploratory Data Analysis and Data Visualization, after collected dataset and wrangled the data.
- Implemented **supervised** and **unsupervised** learning techniques and **deep learning** algorithms – Convolutional Neural Network and Recurrent Neural Network in Python (PyTorch, scikit learn, seaborn…).
- Designed the models and tested the algorithm and fine-tuned the weights and hyperparameters on GPU.

Topological Data Analysis to Phoneme Neural Signals (Brain-Computer Interface Hackathon top prize) [Link]
- Won one of the top prizes in BCI Hackathon instructed by professor Vikash Gilja and several PhD students.
- Wrangled the data and contributed to the Topological Data Analysis (TDA) with Python (PySpike, giotto-tda, seaborn…) from an interdisciplinary perspective in neuroscience, digital signal processing and topology.

SKILL SET

Technical	Python, C++, Java, PureData, Max/MSP, MATLAB, C, JUCE, Xcode, LaTeX, Version Control / Git, XML, Digital Signal Processing, EEG Lab, RaspberryPi, OpenCV, CAD, Soldering, Laser Cut
Creative	Ableton Live, Audacity, Reaper, Pro Tools, Final Cut, Adobe Photoshop / InDesign, Canva