

Xiaoxuan(Andrina) Zhang

Eligible to work for any U.S. employer | Willing to relocate and travel
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<https://andrinazxx.github.io/>

I'm an energetic and trustworthy team player with excellent learning abilities and management skills. Always excited for new challenges, striving to explore new horizons, and thriving in different collaborations. I served as a team lead / program manager multiple times for software development, applied machine learning and artistic projects at UC San Diego. As a musician and producer, I also make music with spatial audio features to provide better and more advanced acoustic experience. Being proud of my identity as both an engineer and an artist / musician, I look forward to transforming technological ideas into real life and learning avant-garde technologies.

EDUCATION

University of California – San Diego

Major in Bachelor of Science, Machine Learning & Neural Computation (Cognitive Science)

Major in Bachelor of Arts, Interdisciplinary Computing and the Arts (Computer Music & Music Technology)

Minor in Computer Science & Engineering

September 2020 – Expected June 2024

Overall GPA: 3.87

Major GPA: 4.0

WORK EXPERIENCE

Software Development Engineer / Project Manager – Qualcomm Institute, San Diego, CA

July 2023 – Present

Sonic Arts Research & Development – Audio Spatialization Lab [Real-time Adaptive Beamforming with camera tracking]

- Implementing a depth camera sensor module with Kinect V2 to control the beamforming with real-time user location tracking.
- Led a team of 4 on audio signal processing for 14 speakers' array in Pure Data with convolution and our own Pd external.
- Deployed real-time adaptive acoustic models for beamforming algorithm with MATLAB, Pure Data and C++.
- Tested 14 speakers' array in real-time and applied modular testing in different phases of the program.
- Created Web scraping tools in Python with bs4 for HRTF filter data collection and applied analysis in MATLAB.

Data Analyst and Market Researcher – LIMBER Prosthetics, San Diego, CA

July 2023 – October 2023

- Led a team of 4; analyzed, designed, and introduced innovative strategy to LIMBER about entering international markets.
- Applied exploratory data analysis and visualization with Geopandas in Python and research analysis skills.

Instructional Assistant for “Introduction to Python” – UC San Diego

August 2021 – March 2022

- Led weekly review sessions and office hours. Hosted two Coding Labs and help students to debug in Python.
- Worked on and graded Coding Labs Assignments and Exams throughout the quarter.

LEADERSHIP EXPERIENCE

14 projects on my website: <https://andrinazxx.github.io/>

Music Genre Classification implementing kNN, SVM, CNN and RNN [\[Link\]](#)

- Led a team of 5, organized the meetings and frequently met the professor and the teaching assistants.
- Applied Exploratory Data Analysis and Data Visualization skills, 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, numpy, pandas...).
- Designed the models and tested the algorithm and fine-tuned the weights and hyperparameters on GPU.

Convolutional Neural Networks and SVR implementation for earthquake prediction [\[Link\]](#)

- Led a team of 4. Held meetings; raised the research hypothesis; collected dataset and wrangled the data.
- Utilized classical and deep learning methods to designed the models in Support Vector Regression and Convolutional Neural Network with Python (TensorFlow, geopandas, matplotlib...).

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.

Deep Learnig Audio Generative AI application + spatialized Music Production [Senior Project Work-In-Progress]

- Building MidiNet from scratch with numpy and deploying the product to website and iOS Music App with Swift, Swift UI, API.
- Using the MIDI samples on creative music production and will make them spatialized with binaural and Ambisonics version.

SKILL SET

Technical Skills

Python, Java, MATLAB, Pure Data, Max/MSP, C++, C, Swift, Xcode, LaTeX, Git / Version Control, XML, Digital Signal Processing (audio, neural), EEG Lab, RaspberryPi, OpenCV, CAD, Excel, PowerPoint, Word

Production

Ableton Live (Production, Mixing & Mastering), Audacity, Reaper, Pro Tools, Final Cut, Adobe Suite, Canva

ORGANIZATIONS

EMG prediction and applied machine learning prosthetics – Triton NeuroTech at UCSD ECE

March 2023 – Present

- Analyzing EMG data of fingers to realize movement prediction, which can feed back to the prosthetic hand (created by our hardware group) to automate its finger movement.

IoT Spotify Remote – Project in Box at UCSD ECE

October 2022 – December 2022

- Applied a Wi-Fi microchip to navigate through Spotify API, which makes our team able to have an IoT controller for our playlist.