Xiaoxuan *(Andrina)* Zhang

https://andrinazxx.github.io/

Eligible to work for any U.S. employer | Willing to relocate and travel
Boston, MA | (858) 319-9393 | xiz031@ucsd.edu | LinkedIn

I'm an energetic and responsible team player that can learn skills fast. I have served as a team lead / PM multiple times for software development, machine learning, and artistic projects at UC San Diego. As an engineer, I look for challenges and hope to bring pleasant user experience to products with human centered design. As a musician and producer, I make music with 3D spatial audio features, thriving to more advanced acoustic experience. I look forward to transforming avant-garde technological ideas into the real world and contributing my interdisciplinary background with 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: 3.87
B.A. Interdisciplinary Computing and the Arts - Computer Music & Music Technology   Major GPA: 4.0
Minor in Computer Science & Engineering

WORK EXPERIENCE

Software Engineering / Product Innovation Co-op – Bose Corporation, Framingham, MA   *July 2024 – Present*
- Working on brand new spatial audio features on surround soundbars with C++ and acoustical skills.

Software Development Engineer Intern – Qualcomm Institute, San Diego, CA   *July 2023 – June 2024*
Sonic Arts Research & Development – Audio Spatialization Lab
- Created Web scraping tools in Python with bs4 for HRTF filter data and applied analysis in MATLAB.
- Solved / Debugged the Audio DSP problem in Max/MSP for the original fixed-point beamforming.
- Led a team of 4 on **Real-time Adaptive Beamforming** project: translated the PMM beamforming algorithm from MATLAB to C++ (11ms latency) and prototyped real-time convolution for 14 speakers' array in Pure Data with our Pd external built in C++.
- Implemented and modular tested a depth camera sensor module with Kinect V2 to control the beamforming with real-time user location tracking.

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 per week to help students to debug in Python. Designed and graded Coding Labs Assignments and Exams throughout the quarter.

ACADEMIC 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, 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.

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 design 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.

SKILL SET

Technical   Python, C++, Java, Pure Data, Max/MSP, MATLAB, C, JUCE, Xcode, LaTeX, Version Control / Git, XML, Digital Signal Processing, IRCAM Spat, EEG Lab, RaspberryPi, OpenCV, CAD
Creative   Ableton Live, Audacity, Reaper, Pro Tools, Final Cut, Adobe Suite, Canva