Amir Lankarani

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EDUCATION

Columbia University   New York, NY
M.S. in Computer Science, **GPA: 4.05/4.00**   May 2023
- <u>Relevant Courses</u>: Advanced Sound, Speech Recognition, Computer Vision, NLP, Operating Systems, AI

Columbia University   New York, NY
B.A. in Biological Sciences, **GPA: 3.94/4.00**   May 2020

TECHNICAL SKILLS

Languages: C/C++/C#, Python, Bash, JavaScript, Java, Unix Kernel
Software: Unity, FMOD, Ableton, Photoshop, Premiere, Serato, Tableau
Audio Tools: Pure Data, Web Audio, Essentia, Librosa, Kaldi, Meyda, Nussl
Other Tools: PostgreSQL, PyTorch, D3.js, Git, Google Cloud, Flask, P5.js
Spoken Languages: Farsi (Native) and Spanish (Beginner)

PROJECTS

"On Off the Air:" an Audio-Visual Exploration of the TV Show   Mar 2023 - Jun 2023
- Created a real-time audio-visual distortion method to enhance accessibility of streamed videos for deaf individuals
- Extracted ML classification data and employed PCA to identify meaningful associations between audio-video frames
- Utilized stacked and flattened frames to generate barcodes, enabling K-means clustering and color prevalence analysis

Lyric-Based Source Separation   Sep 2022 - May 2023
- Modified Kaldi speech tools to facilitate batch extraction of posteriorgrams and lyrical alignments from mixed music
- Constructed an innovative PyTorch model using posteriorgrams, alignments, and spectral data for RNN processing

Music Library Remixer   July 2022 - Dec 2022
- Developed a program to decompose each song in a music library into organized sets of different stems
- Automated the creation of new songs by layering random stems after matching their pitch, tempo, and onset positions

Music Library Database and Web Interface   Jan 2023 - May 2023
- Constructed a PostgreSQL DB to store music library data, allowing concurrent use by DJs, producers, and music fans
- Designed a user-friendly Flask website enabling intuitive access to advanced music queries through simple commands

PROFESSIONAL EXPERIENCE

Columbia Microbiome Core   New York, NY
Research Technician   Sep 2020 – Sep 2021
- Designed sequencing projects, conducted computational analyses, and prepared reports for diverse client researchers
- Identified novel traits in the outbreak of Staph spread by needles in NYC, improving infection treatment for clinicians

Hospital for Special Surgery   New York, NY
Columbia Navab Fellow   May 2019 – Jul 2019
- Automated the counting and analysis of osteoclasts from images of bone cell cultures using classical vision techniques
- Conducted automated analyses of mice models, uncovering a novel link between purine metabolism and osteoporosis

EXTRA-CURRICULARS

President and Audio Engineer at CU Records   Jan 2017 - May 2020
- Managed Columbia's only accessible record studio, training hundreds of students in audio engineering and production
- Recorded and mixed audio projects for students, and organized a variety of free concerts, mixtapes, and music videos

Radio Host for WBAR and WKCR   Jan 2017 – May 2019
- Curated and hosted for historic hip hop radio show Offbeat and my own radio show exploring the history of jazz rap

Other: Music producer, Games for Change volunteer, president of the Iranian Students Association, resident advisor