**Amir Lankarani**

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**EDUCATION**

**Columbia University** New York, NY

*M.S. in Computer Science,* **GPA: 4.05/4.00** May 2023

* Relevant Courses: 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