AIDAN SINGH

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EDUCATION

Cornell Tech (Cornell University), New York, NY — May 2024
Master of Engineering in Electrical and Computer Engineering
Select Coursework: ML Engineering, ML Hardware, Natural Language Processing, Digital Signal Processing, Virtual Reality

New York University, New York, NY — May 2023
Bachelor of Music in Computer Science and Music Technology | GPA: 3.73/4.0
Select Coursework: Machine Learning, Linear Algebra, Data Structures, Algorithms, Computer Systems Organization, Data Management & Analysis, Operating Systems, 3D Audio, Audio Streaming Technology, Audio Digital Signal Processing, Calculus 1 & 2

TECHNICAL SKILLS

Coding Languages: Python, SQL, Java SE, C#, C, C++, x86 Assembly, Matlab, Cuda
Tools: PyTorch, SciKit-Learn, Pandas, Docker, Google Cloud Platform, Github, BigQuery, Apache Airflow, Unity
Certifications: Safe Zone Certified (Cornell Tech), Deep Learning for Music Information Retrieval (Stanford University)

EXPERIENCE

Tulip AI, Audio AI Scientist (Python) — January 2024 – May 2024
- Conducted literature review for audio generation and fine tuning, designed fine-tuning method for Meta's audio-craft models
- Authored Python and Shell scripts to download audio from the library of congress (archive.org api)
- Designed coding and data collection tasks for undergrad interns, exercised asynchronous communication & technical reviews

Universal Music Group, Data Engineering Intern (Python, SQL, GCP, Apache Airflow, Dataflow, Git) June 2022 – August 2022
- Programmed a production incremental data pipeline (ETL) to ingest music streaming metrics from Meta
- Performed detailed analysis on Google Cloud Platform (GCP) Storage to identify potential optimizations saving $100k/year
- Collaborated effectively with another intern and engineering team using data lake exceeding 10 Petabytes
- Utilized cloud-based technologies for data: data pipelines, data architecture, data governance (security), internal applications

NYU Music and Audio Research Lab (MARL), REU (Python, C/C++, Git**)** — November 2021 – May 2022
- Contributed to micarraylib, an open-source Python library for audio data aggregation in machine learning pipelines
- Translated audio algorithms from ambisonic encoder 'Array2SH' from C/C++ to Python with unit testing
- Participated in National Science Foundation REU Program, advised by Iran R. Roman under Juan P. Bello

Alan Silverman, Audio Engineer (Logic X) — May 2021 – July 2021
- Used digital audio tools to modify recordings' pitch and timing for Grammy winning folk artist Judy Collins
- Edited audio files (piano stems) in 8 songs, splicing and compiling multiple files with creative discretion
- Collaborated with 80+ time Grammy nominated and winning audio engineer Alan Silverman

Old Mill Road Recording, Audio Engineering Intern (Pro Tools, Logic X, SSL Duality) — August 2020 – February 2021
- Operated analog and digital audio equipment with a focus on signal flow for recording and outboard-processing
- Prepared microphones for drums, piano, and guitar. Set rack equipment and recall sheets
- Assisted Grammy award winning audio engineer Ben Arrindell, credited on Emmy winner Lillias White's first studio album

PROJECTS

Song Genre Classification (Python, SKLearn) — 2023
- Designed and trained an SKLearn AdaBoost machine learning model to classify song genre using features from Spotify's API
- Achieved an average AUROC score of .88 for classifying 10 musical genres
- Prepared data from 50,000 songs through feature extraction and handling missing and low-quality data

Spatial Drawing Application (C#, Unity) *Code available upon request* — 2023
- Created a unity based spatial design application (.apk) for VR, developed on Meta Quest
- Implemented locomotion and object manipulation from scratch utilizing the Unity XR Interaction Toolkit and 3D math
- Spearheaded object placement (placing, scaling and orienting primitive objects) within a group project

Binaural Ambisonic Audio Decoder (Python, Jupyter Notebook) — 2022
- Implemented and compared different virtual speaker arrays for binaural decoding (with HRTFs) of First-Order-Ambisonics
- Evaluated spatial audio representations by comparing inter-aural cross correlation and spectrograms to an established VST