Souray Pande

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WORK EXPERIENCE Nora Music

Audio DSP Software Engineer

- Developing a web audio platform for musicians, offering verified stems, alternate takes, artist notes, chord progressions, and more to streamline the music creation process.
- Engineering and optimizing the DSP functionalities within the platform, ensuring seamless and high-quality audio • playback and manipulation.
- Building a recommendation system that uses machine learning to suggest similar-sounding stems and sounds, • enhancing user creativity and workflow.

Virtual Experiences Simulation Lab

XR Software Engineer

- Developed and integrated VR features for "Mangrove City," an educational VR experience about mangrove forests, using Unity and C#, and optimized performance for VR (Quest 2) deployment.
- Guiding and mentoring junior developers as a senior developer, contributing to their professional development while ensuring project success across various initiatives.
- Authored detailed spec sheets for upcoming XR projects, providing clear direction for development teams and • ensuring timely achievement of project goals within budgetary constraints. Miami, FL

University Of Miami

Graduate Teaching Assistant - Digital Signal Processing

- Aug 2023 May 2024 Facilitated hands-on learning experiences for students during lab sessions, resulting in an increase in understanding of theoretical concepts and practical applications.
- Supported the development of new audio signal processing projects by providing mentorship to students, empowering students to implement DSP techniques for audio effect design.

Frost School Of Music

Live Sound and Recording Engineer Aug 2022 - May 2023 Collaborated with musicians and ensembles to implement customized front of house mixes reflecting each artist's style, while also overseeing sound reinforcement and managing audio production for over 50 live events.

InventOnUs Tech

Software Engineering Intern

- Researched and implemented cutting-edge optimization algorithms tailored to test case generation using Python, resulting in a 20% increase in efficiency.
- Analyzed data and results to fine-tune algorithm parameters, leading to a 15% improvement in overall algorithm effectiveness.

PROJECT EXPERIENCE

Deep Learning Based Auditory Zooming

- Designed and implemented an audio visual zooming system using pytorch to selectively zoom in on specific sound sources while attenuating interferences.
- Conducted comprehensive testing and evaluation of the system's performance using objective metrics such as Short-Time Objective Intelligibility (STOI) and Perceptual Evaluation of Speech Quality (PESQ), demonstrating its efficacy in improving speech clarity and quality across varying interference levels.

Spatial Maps

- Engineered an innovative navigation solution utilizing Head-Related Transfer Functions (HRTFs) to deliver precise audio instructions with spatial cues, improving user orientation and navigation efficiency.
- Integrated spatial audio prompts for navigating turns, aiding users who struggle with direction discernment and assisting individuals with visual impairments in confidently navigating their surroundings.

BeamMax

- Developed a real-time beamforming application that spatially filters sound sources in environments with multiple competing audio sources. Enhancing signal-to-noise ratio, resulting in more intelligible audio recordings. Audio DSP Plugins
- Developed DAW-compatible and standalone Audio Plugins, including Delay, Equalizer, Comb Filter, Synthesizer, and Sampler, initially prototyped in MATLAB and subsequently built using C++ and JUCE.

Dataset Simulation

- Utilized Pyroom Acoustics, a Python package, to overcome constraints in acquiring acoustic data for machine learning applications.
- Generated synthetic room impulse responses (RIRs) accurately simulating diverse room sizes, acoustic properties, and microphone/speaker configurations.

Acoustic Analysis

- Conducted an in-depth acoustic analysis of a room, focusing on optimizing sound quality. Identifying acoustic • issues such as reverberation, reflections, and resonance, and proposed strategic solutions for effective treatment.
- Provided recommendations for speaker placements and listening positions to ensure optimal sound reproduction and immersive audio experiences within the treated space.

Miami, FL

May 2023 - May 2024

Remote | Los Angeles, CA

Jul 2024 - Present

Miami, FL

July 2021 - Jan 2022

Pune, MH

MaxViz

• Developed an interactive tangible user interface (TUI) for Max MSP, enabling real-time parameter control via physical object manipulation using camera tracking and Open Sound Control (OSC) protocol.

LuminoSynth

• Created an interactive experience where users trigger real-time modulation of synthesizer notes by moving their hands over light sensors, utilizing Arduino for sensor integration and Pure Data for audio processing.

EDUCATION

University of Miami	Miami, FL
Master of Science in Music Engineering Technology GPA - 3.83	May 2024
Coursework: Digital Signal Processing, Statistical Signal Processing, Acoustics,	
Computational Psychoacoustics, Transducer Theory.	
Savitribai Phule Pune University	Pune, MH
Bachelor of Technology in Computer Engineering GPA 3.84	May 2022
 Coursework: Data Structures and Algorithms, Object Oriented Programming, Operating Systems, Appleg Electronics, Machine Learning 	, Digital and
Analog Electronics, Machine Leanning.	

TECHNICAL SKILLS

Languages | Frameworks : C/C++, Matlab, Python, C# | JUCE, Pytorch, Librosa Tools | Audio Workstations: Git, Unity, SPICE | FL-Studio, Max MSP, Ableton Live