Shriyansh Singh

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SUMMARY

Audio AI Research Engineer with expertise developing **generative models** for **music creation** and implementing production-grade **inference pipelines** for creative audio applications.

PROFESSIONAL EXPERIENCE

Audio ML Research Engineer *April 2024 - Dec 2024*

Hyphenova AI *Los Angeles, CA*

- **Architected** high-performance **audio generation pipeline** using transformer-based models that synthesized musical content matching user-specified mood, genre, and instrumentation parameters
- **Designed** and **implemented inference optimization algorithms** that reduced latency by 68% while preserving generation quality, enabling real-time creative applications
- **Developed** novel **evaluation metrics** for measuring music coherence and aesthetic quality that correlated with human preferences at 0.82 Pearson coefficient
- **Published** research paper on controllable music generation techniques at a major audio ML conference, with techniques subsequently integrated into production systems

Audio ML Engineer *May 2022 - Oct 2022*

Enterprise Business Technologies *Mumbai, India*

- **Created** robust **audio feature extraction system** that processed and analyzed musical content for mood classification with 94% accuracy across diverse genres
- **Led** development of **data annotation pipeline** for creating high-quality training datasets that improved model performance by 35% on downstream tasks
- **Engineered Python libraries** for audio preprocessing and augmentation that standardized workflow across research and production teams
- **Collaborated** with UX designers to translate technical capabilities into intuitive interfaces for creative professionals with minimal ML knowledge

RESEARCH PROJECTS

Neural Music Generation System | *PyTorch, Transformers, TorchAudio, Python, CUDA* *Jan 2024 – Apr 2024*

- **Designed** and **implemented** a **generative model** for creating original musical compositions that combined transformer architecture with specialized audio embeddings
- **Developed** a **reinforcement learning framework** for fine-tuning generation models using human feedback that increased user preference ratings by 42%
- **Created** comprehensive **evaluation infrastructure** with objective metrics and perceptual tests that accelerated model iteration by providing consistent quality benchmarks

Audio Synthesis Model Optimization | *PyTorch, ONNX, TensorRT, C++, Python* *Sep 2023 – Dec 2023*

- **Engineered model quantization** and optimization techniques that reduced inference time by 78% while maintaining audio quality within perceptually acceptable thresholds
- **Implemented streaming inference API** that enabled real-time audio generation with latency under 50ms, making it suitable for interactive creative applications
- **Developed cross-platform deployment solution** that standardized model serving across different hardware configurations with consistent quality guarantees

TECHNICAL EXPERTISE

Audio ML: Music Generation, **Audio Signal Processing**, **MIR (Music Information Retrieval)**, **Neural Audio Synthesis**, Source Separation
ML Frameworks: PyTorch, **TensorFlow**, **TorchAudio**, **librosa**, Transformers, JAX, ONNX, TensorRT
Research Areas: Generative Models, **Reinforcement Learning**, **Self-Supervised Learning**, Evaluation Metrics, Model Compression
Programming: Python, C++, CUDA, Shell Scripting, JavaScript
Infrastructure: MLflow, **Docker**, Kubernetes, **CI/CD Pipelines**, **AWS**, Google Cloud

EDUCATION

Indiana University Bloomington Aug 2023 – May 2025

Master of Science in Data Science *Indiana, United States*

- Research Focus: Audio Machine Learning, Music Generation Systems, Deep Learning for Creative Applications
- GPA: 3.8/4.0