

JAYANT MANCHANDA

Software and Machine Learning Engineer - Audio and Music

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PROFILE

Software and machine-learning engineer with five years of professional engineering experience and an MSc in Sound and Music Computing. Current work focuses on music information retrieval, audio analysis, generative modelling, and production audio pipelines.

WORK EXPERIENCE

Software / Machine Learning Engineer (Contract) | **Sing One Song** *Remote* Mar 2026 - Present

- ▶ Develop and maintain music-information-retrieval pipelines for singing-performance analysis, including pitch, timing, audio-to-MIDI transcription, and audio-processing tasks.
- ▶ Built an end-to-end audio-to-MIDI transcription framework to align karaoke tracks.
- ▶ Investigate device-related issues that affect scoring and analysis across live recordings.

Full-Stack Engineer (Contract) | **Cricket8** *London / Remote* Nov 2025 - Feb 2026

- ▶ Developed frontend and backend features for a live sports product, including real-time data updates and in-play user interactions.
- ▶ Worked across application APIs, interface behaviour, and production debugging in a short-term engineering role.

Product / Full-Stack Engineer | **Hubhopper** *New Delhi / Remote* Dec 2023 - Sep 2024

- ▶ Worked on podcast processing workflows, including audio-format standardisation, episode stitching, and dynamic audio insertion.
- ▶ Built and maintained podcast analytics and data-ingestion services using Elasticsearch, AWS Athena, Node.js, and application databases.
- ▶ Supported the processing, delivery, and monitoring of podcast content across a production platform.

Software Engineer | **Orah** *Remote* Sep 2022 - Feb 2024

- ▶ Developed and maintained production web services and investigated live issues using logging and observability tools.
- ▶ Contributed to sprint planning, code reviews, and exploratory work on user-interaction analytics.

Software Developer | **Hubhopper** *New Delhi* Oct 2020 - Sep 2022

- ▶ Built and maintained REST APIs and database-backed services for podcast publishing, subscriptions, transactions, and analytics.
- ▶ Developed creator- and listener-facing features in React and Node.js.
- ▶ Co-developed a browser-based audio editor and audiogram tool using the Web Audio API.

SELECTED PROJECTS

Timbre Transfer with VAE-GANs and Latent Diffusion | *MSc thesis* Queen Mary University of London

github.com/manchandajayant/Diffusion-Style-Transfer

- ▶ Trained RAVE and BRAVE models on upright-bass recordings and compared them with an inference-time method using the pretrained Stable Audio Open diffusion transformer.
- ▶ Adapted attention reweighting for audio using DDIM inversion and null-text inversion, working directly with transformer layers during sampling.
- ▶ Evaluated timbre transfer, reconstruction, pitch preservation, and loudness preservation across the model approaches.

Singing Voice Separation | *U-Net mask estimation* MSc project

github.com/manchandajayant/Vocal-extractor-unet

- ▶ Implemented and trained a U-Net source-separation model on spectrograms, predicting time-frequency masks for vocals and accompaniment.
- ▶ Built the pre-processing, training, reconstruction, and evaluation workflow for the assignment.

Audio Fingerprinting System | *Music recognition* Personal project

github.com/manchandajayant/Audio-recognition

- Implemented a constellation-map audio fingerprinting and matching pipeline for identifying music from short recordings with over 80% accuracy.
- Tested the matching process under different input conditions and organised the backend for storing and retrieving fingerprints.

EDUCATION

MSc Sound and Music Computing - Distinction

2024 - 2025

Queen Mary University of London

Generative Music AI Workshop

2024

Universitat Pompeu Fabra, Barcelona

Master of Design - Distinction

2017 - 2018

Glasgow School of Art

Certificate in Full-Stack Web Development

2020

Codaisseur

TECHNICAL SKILLS

Audio and ML

PyTorch, NumPy, Librosa, MIR, transformers, diffusers, Weights & Biases

Research Practice

Literature review, dataset preparation, experiment design, methodology, model comparison, evaluation

Programming

Python, JavaScript, TypeScript, PHP, Node.js, FastAPI, React

Data and Infrastructure

AWS (Lambda, S3, EC2, ECS/EKS), PostgreSQL, MySQL, MongoDB, Redis, Elasticsearch, Docker, CI/CD

VOLUNTEERING

Website and Communications Volunteer | **Audio Engineering Society (AES)** *Queen Mary University of London* 2025

- Supported website and communications work for AES activities hosted at Queen Mary University of London.