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Julien Guinot, MSc

Data Scientist, Machine Learning Engineer - MIR

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EDUCATION

Ecole Centrale de Lyon, MSc Engineering, BSc Engineering. **GPA: 3.6/4** 2018 - 2022

- **Coursework:** Python, C++, Acoustics, Musical Acoustics, Signal processing, Statistics, Machine Learning.
- **Master's thesis:** Implementation of audio tagging models at scale towards better musical recommendations. **(16/20)**
- **Research project:** 6-month research project on acoustic diodes in monodirectional waveguides

University of Adelaide, MSc Engineering – Study Abroad **GPA: 5.86/7** 2021-2022

- **Coursework:** Deep Learning, Natural Language Processing, Computer Vision, Acoustics, Signal Processing, Machine Learning, Statistics
- **Golden key award for academic excellence** – 15% top GPA in class of 2022.
- **Project:** Music Information Retrieval project – Vocalist classification via spectrogram computer vision (70% accuracy, recall). ([Github](#))
- **Project:** Forecasting – GOOGL stock prediction via RNN (5-10% mean error - MAPE). ([Github](#))

Machine Learning Course - Andrew Ng, Coursera 2021

EXPERIENCE

Data Scientist / Music Information Retrieval Scientist Intern **April 2022 - Present**

Groover

Paris, France

- Implemented audio tagging at scale towards better musical recommendations: Built seven state of the art music tagging models, reaching 92% tag prediction accuracy (ROC-AUC) on the best one. Up to this point, users manually annotated their music.
- Designed full audio processing pipeline – Fetching data, downloading & converting to spectrograms – on 1M tracks totalling about 1 Terabyte of data.
- Extracted key insights from large datasets using Metabase and SQL on user behaviour with A/B testing, improving artist satisfaction score by 10% and showing an additional potential market of 500 artists, representing about 20k€ in additional revenue.

Data Science Intern **March 2021 - September 2021**

Artefact

Paris, France

- Created a Streamlit web app for bulk labelling 1 million sample NLP datasets using Huggingface and TensorFlow. ([Github](#)). Implemented 3 dimension reduction and 3 clustering algorithms to predict automatic clusters of topics for NLP datasets, which saved 130 hours of labelling large datasets and freeing up the tech team to develop solutions faster for 4 clients.
- Consulted for 20 ENGIE stakeholders towards help desk caller polarity sentiment analysis through a speech-to-text pipeline, leading to the identification of 3 main causes for client dissatisfaction with potential gain of 0.8 points out of 5 on satisfaction score when solved.

Research Intern **March 2020 - July 2020**

IRCAM

Paris, France

- Conducted research towards active control of the first vibrational modes of a cello string using MATLAB, reaching 3% spectral error.
- Gained in depth understanding of research methods and signal processing. Developed a strong interest for research in musical domains.

ACTIVITIES AND PROJECTS

President of DJ society Presided over a 16-member DJing and sound engineering student society. Oversaw the organisation of events with 1000 attendees and on average 5000€ in revenue and DJed at them. Organized and oversaw a team of 6 security agents for these parties.

Mixing Engineer Three years as sound engineer for a student musical With 44k€ of equipment & 2000 spectators. Mix engineer for the album of 24-track orchestral arrangements ([Link](#))

SKILLS

Languages and Packages	Python, Pytorch, TensorFlow, Librosa, Pandas, Sklearn, SQL, C++, Javascript, React, Django, NoSQL
Tools and platforms	Git, Github, AWS, Metabase, Jira, Jenkins, Azure cloud, LaTeX
Quantitative	Machine Learning, Deep Learning, Music Information Retrieval, NLP, Computer Vision, Statistics, data analysis, Signal processing, Acoustics.
Creative and Music	Ableton, FL Studio, Photoshop, Premiere, Illustrator
Independent research	Video Classification with Video transformers on Music tagging, Vocal register segmentation, Drum sample generation through diffusion.
Medium articles	Vulgarization of state-of-the-art ML on medium (Link)

MUSIC

Instruments	8-year self-taught Guitarist, Bassist, Keyboardist. Bass vocalist. DJ for 1000-people events.
Performance	Bass vocalist in SATB choir for 2000-audience musical. Choir leader the following year (Link)
Composition	Soundtrack for trailer of animated series with ancient maya theme (Link)
Production	Disco House Track made using FL studio, remastered on Ableton (Link)
Arrangement	Let it Snow (Link) for SATB choir - Santiana (Link) & Misty mountains (Link) for solo choir