Vedant Kalbag

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Education

Georgia Institute of Technology **(GPA: 3.81)** **Aug 2021–May 2023 (expected)**
Master of Science in Music Technology *Atlanta, GA*
Relevant Coursework:
Computational Data Analysis, Recommender Systems, Audio Content Analysis

PES University **Aug 2016–May 2020**
Bachelor of Technology in Electronics and Communication Engineering *Bangalore, India*

Work Experience

Cochl.ai | **Tools: TensorFlow, scikit-learn, librosa, numpy** **May–Aug 2022**
Research Scientist Intern *Seoul, S.Korea*

- Built a noise-robust system for genre classification achieving an accuracy of 72% on unseen data across 10 classes
- Analyzed sensitivity of state-of-the-art methods using real-world noise addition and blended convolution

MiQ Digital India | **Tools: Python, Spark, SQL, Excel, PowerPoint** **Jan 2020–Jul 2021**
Data Analyst - Digital Marketing *Bangalore, India*

- Extracted and interpreted **data-driven insights** making **actionable recommendations** that resulted in increased ROI for clients across CPG, FMCG and QSR sectors
- Automated analysis for $2M of annual digital marketing spend data and to optimize targeting through cross team collaboration
- Initiated and formulated **code templates, tools and automation** to reduce analyst dependency and turn-around time on urgent requests by 2400%
- **Conducted A/B testing** between different creatives to determine the most effective method to reach a consumer
- Mentored an intern to take over ownership of 10 key accounts

Research Projects

Ambient Music Synthesis for eBooks | **Tools: PyTorch, transformers** | Guide: Dr. Alexander Lerch **Aug–Dec 2022**

- Implemented a system for affect-conditioned **ambient music synthesis** using probabilistic models
- Built a text emotion classifier for **sentiment analysis using RoBERTa embeddings** to predict 5 classes based on the circumplex model
- Conducted user studies and **A/B testing** to determine whether the generated output had the desired effect

Drum Playing Style Recognition | **Tools: scikit-learn, numpy, scipy** | Course Project **Aug–Dec 2021**

- Achieved 72% accuracy in predicting the style of music played based on the drum audio across 4 classes
- Led a group of 3 to extract features such as beat histogram, other spectral & temporal features and make use of different feature selection methods for optimization such as **mutual information and variance threshold**

Scream Detection in Heavy Metal Music | **Tools: scikit-learn, TensorFlow** | Guide: Dr. Alexander Lerch **Aug–Dec 2021**

- Compiled a dataset of annotated screams in heavy metal comprising of 57 songs and created a benchmark system for scream detection and classification
- Leveraged different machine learning methods such as kNN, SVM, RandomForest and CNN to build a vocal style classifier achieving an f1 score of 87%

Publications and Awards

Kalbag, Vedant & Lerch, Alexander "Scream Detection in Heavy Metal Music"
Proceedings of the 19th Sound and Music Computing Conference
https://doi.org/10.5281/zenodo.6798210

Most Innovative Solution- "Kathaa: An Immersive AI Storytelling Platform" **Jul 2022**
1st Sound of AI Hackathon *Team Katha*

Technical Skills

Key Skills: Data Gathering and Analysis, Statistical Testing
Certifications: **IBM Data Science Professional Certificate**
Languages: Python, SQL, C++, Matlab, C
Big Data Technologies: Spark, Hive
Professional tools: Git, Docker, JIRA