Sanjeel Parekh

✉ sanjeel.parekh@telecom-paris.fr
sanjeelparekh.github.io

Education

2016–19 **PhD in Computer Science**, Technicolor R&D and Telecom Paris, France.
Thesis: Learning representations for robust audio-visual scene analysis
Advisors: Prof. Slim Essid, Prof. Gaël Richard (Telecom Paris)
Dr. Alexey Ozerov, Dr. Ngoc Duong, Dr. Patrick Pérez (then at Technicolor)
Reviewers: Dr. Josef Sivic (INRIA / ENS, France), Prof. Tuomas Virtanen (TUT, Finland)
- Proposed novel approaches that fuse audio and visual modalities to robustly perform scene understanding tasks such as event classification, audio source separation/detection, visual object localization. Manuscript at https://pastel.archives-ouvertes.fr/tel-02115465

2014–15 **Master in Sound and Music Computing**, Universitat Pompeu Fabra, Barcelona.
Thesis: Improving audio retrieval through content and metadata categorization
Advisors: Prof. Xavier Serra and Dr. Frederic Font, Music Technology Group
- Improved audio retrieval in the context of `freesound.org` through morphological description of audio content and topic modeling of metadata (https://zenodo.org/record/3733039)

2010–14 **Bachelor of Technology (hons.) in Electronics and Communication Eng.**, The LNM Institute of Information Technology, Jaipur, CGPA: 9.65/10, Class Position: **2/197**.
Thesis: Exploring speech representation schemes: A manifold learning approach
Advisors: Dr. Chng Eng Siong (NTU, Singapore) and Dr. Pratik Shah (IIIT-Vadodara)
- Investigated various manifold learning algorithms and sparse representation paradigm for feature extraction and classification of vowels

North Indian Classical Music, Vocal

2012 **Sangeet Bhushan**, Pracheen Kala Kendra, Chandigarh, India.

Honors and Achievements

2019 Awarded ISMIR 2019 community grant for delivering tutorial on Audiovisual Music Processing with Prof. Zhiyao Duan, Prof. Slim Essid and Bochen Li

2015 Awarded CIFRE Fellowship to conduct doctoral research within an industry-university collaboration in France

2012 Received letter of commendation for highest cumulative performance index, LNMIIT

2012 Interviewed by All India Radio in the program 'Shining Star' as a young classical vocalist (Broadcasted on 26/12/2012)

Work Experience

Feb 2020–Present **Postdoctoral Researcher (Project Leader)**, Telecom Paris, France.
Active Learning and Kernel Methods, Chair on Data Science & Artificial Intelligence
Advisor: Prof. Florence d'Alché-Buc
- Working on active learning and infinite task learning applications such as style transfer
- Managing several chair activities: for e.g. creating content for research dissemination, organizing weekly team meetings (agenda and presentations)

Feb 2019–20 **Research Engineer**, The A-sense and Telecom Paris, France.
Audio Scene Analysis
Team: Prof. Slim Essid, Dr. Raphael Blouet, Dr. Francois Rigaud
- Worked on real-time audio event detection for the A-sense startup (Details not provided due to non-disclosure agreement)

Oct 2015 **Algorithm Engineering Intern**, Douban Inc., Beijing.
Music Recommendation
Advisor: Dr. Jason Zhao, Director of Algorithm and Douban FM Product Team
- Proposed and implemented an algorithm to improve Douban FM, company's music recommendation system (Details not provided due to non-disclosure agreement)

Dec 2013 **Carnegie Mellon University IPTSE Winter School**, Multimedia Proc. & Data Mining.
Content-Based Video Indexing and Retrieval Using Corr-LDA
Advisors: Dr. Bhiksha Raj and Dr. Rita Singh (CMU, USA)
- Designed a novel content-based video indexing and retrieval system using correspondence latent dirichlet allocation (Corr-LDA) framework (http://arxiv.org/pdf/1602.08581v1.pdf)

May–Aug 2013 **EEE Research Attachment Programme**, NTU, Singapore.
Polymer Based Thin Film Organic Photovoltaic Solar Cells
Advisor: Dr. Tang Xiaohong, School of Electrical and Electronic Engineering
- Fabricated P3HT/PCBM organic solar cells
- Acquired experimental skills in spin coating, thickness measurement & solar cell characterization
- Simulated device models for bulk heterojunction organic solar cell

May–Jul 2012 **Research Intern**, Microsoft Research Lab, India.
Quantifying People's Affinity Towards Pentatonic Scales
Advisors: Dr. Ranjita Bhagwan and Dr. Monojit Choudhury
- Designed a web interface (survey) consisting of several experiments to gather data for understanding people's affinity and choice hierarchy for a chosen set of existing and theoretical pentatonic scales

Publications and Patents

Please visit my google scholar page (link) or see the Appendix (Page 3)

Skills

Technical Programming/Frameworks: Python, PyTorch, TensorFlow, Keras, MATLAB, C

Course work: signal processing, machine learning, optimization, music perception
Machine learning (MLSS 2017) & computer vision (ICVSS 2016) summer schools.

Music Vocal: North Indian Classical Music | Instruments: Harmonium, Tabla

Language Full Professional Proficiency: English, Hindi | Elementary: French

Professional and Extracurricular Activities

Reviewing IEEE Transactions on Audio, Speech and Language Processing, EURASIP Journal on Audio, Speech, and Music Processing, 2017, 2018, ISMIR 2020

Music Joined music band at Technicolor as a vocalist, 2017–2018

Selected to judge auditions for music performances at Rishi Valley School, 2009

Performed in several vocal stage programs / Lead school singing assemblies, 2006–10

Theatre Participated in several English and Hindi plays

Attended a 60-day theatre workshop by National School of Drama graduates

Selected Technical Talks

May 2020 Audiovisual representation learning with applications to music performances
Invited expert talk at ATAL-AI Faculty Development Program, IIIT Vadodara

Jan 2020 Learning representations for robust AV scene analysis
ENS, Lyon, France - Successful postdoc application in Dr. Remi Gribonval's group

Nov 2019 Tutorial on Audio-visual Music Processing (with Prof. Z. Duan, Prof. S. Essid and B. Li)
ISMIR 2019, TU Delft, Netherlands

Appendix

List of Publications

Journals and Book Chapters

1. A. Lambert*, **S. Parekh***, Z. Szabó, F. d'Alché-Buc. Emotion Transfer Using Vector-Valued Infinite Task Learning. (*equal contribution) [submitted to ECML 2021 Journal Track]
2. **S. Parekh**, S. Essid, A. Ozerov, N. Duong, P. Pérez, G. Richard. Weakly Supervised Representation Learning for Audio-Visual Scene Analysis. IEEE/ACM Transactions on Audio, Speech and Language Processing, Dec. 2019.
3. S. Essid, **S. Parekh**, N. Duong, R. Serizel, A. Ozerov, F. Antonacci, A. Sarti, Multiview approaches to event detection and scene analysis. In T. Virtanen, M.Plumbley and D. Ellis (Eds.), Computational Analysis of Sound Scenes and Events, Springer 2018.

Conferences and Workshops

1. **S. Parekh**, A. Ozerov, S. Essid, N. Duong, P. Pérez, G. Richard. Identify, Locate and Separate: Audio-visual object extraction in large video collections using weak supervision. IEEE WASPAA 2019 (**oral**)
2. **S. Parekh**, S. Essid, A. Ozerov, N. Duong, P. Pérez, G. Richard. Weakly Supervised Representation Learning for Unsynchronized Audio-Visual Events. CVPR Workshop on Sight and Sound 2018 (**oral**)
3. J. Parekh, H. Tibrewal and **S. Parekh**. Deep Pairwise Classification and Ranking for Predicting Media Interestingness. ACM ICMR 2018 [as an advisor]
4. **S. Parekh**, S. Essid, A. Ozerov, N. Duong, P. Pérez, G. Richard. Guiding audio source separation by video object information. IEEE WASPAA 2017
5. **S. Parekh**, S. Essid, A. Ozerov, N. Duong, P. Pérez, G. Richard. Motion informed audio source separation. IEEE ICASSP 2017 (**oral**)
6. **S. Parekh**, F. Font, X. Serra. Improving Audio Retrieval through Loudness Profile Categorization. IEEE ISM 2016 (**oral**)
7. **S. Parekh** and P. Shah. Nyquist filter design using POCS methods: Including constraints in design. IEEE ISSPIT 2014

Filed Patents

1. S. Parekh, S. Essid, A. Ozerov, N. Duong, P. Pérez, G. Richard. Weakly Supervised Learning for Unsynchronized Audio-Visual Events, 2018. EP3540634A1
2. S. Parekh, S. Essid, A. Ozerov, N. Duong, P. Pérez, G. Richard. New approaches to motion informed audio source separation, 2017. US15956021