Sanjeel Parekh

+33 (0)7 68 29 82 94
sanjeel.parekh@telecom-paris.fr
sanjeelparekh.github.io

Education

Jan 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)

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, UPF
- We organize audio content and metadata information through morphological description and topic modeling respectively to improve audio retrieval in the context of `freesound.org`

2010–14 **Bachelor of Technology** in Electronics and Communication Engineering (hons.), 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

2008–10 **Class 12th**, Rishi Valley School, KFI, AP, ISC Board Examination – 91.0%.

North Indian Classical Music, Vocal

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

2011 **Junior Diploma**, Prayaag Sangeet Samiti, Allahabad, India.

Work Experience

Feb 2019–Present **Postdoctoral Research Engineer in Machine Learning and Signal Processing**, Telecom Paris, France.
Audio Scene Analysis
Team: Prof. Slim Essid, Dr. Raphael Blouet, Dr. Francois Rigaud
- Working on real-time audio event detection
  (Details not provided due to non-disclosure agreement)

October 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)

December 2013 **Carnegie Mellon University IPTSE Winter School**, Multimedia Processing and Data Mining.
Content-Based Video Indexing and Retrieval Using Corr-LDA
Advisors: Dr. Bhiksha Raj and Dr. Rita Singh (Carnegie Mellon University, USA)
- We use the correspondence latent dirichlet allocation (Corr-LDA) probabilistic framework to propose a novel technique for content-based video indexing and retrieval (`http://arxiv.org/pdf/1602.08581v1.pdf`)

May–August 2013 **EEE Research Attachment Programme**, Nanyang Technological University, Singapore.

Polymer Based Thin Film Organic Photovoltaic Solar Cells

Advisor: Dr. Tang Xiaohong, Division of Microelectronics, School of Electrical and Electronic Engineering

- Fabricated P3HT/PCBM organic solar cells
- Acquired experimental skills in spin coating, thickness measurement and solar cell characterization
- Simulation of device models for bulk heterojunction organic solar cell

May–July 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

2011–15 **Selected Course Projects**.

- VOWAN: A smartphone-based digital music instrument
- Synthesis of Tabla (Indian percussion instrument) sounds

Achievements

2019 Awarded ISMIR 2019 Community Grant

2015 Awarded CIFRE Doctoral Fellowship (funded by the French Ministry of Higher Education and Research)

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

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

Skills

Technical Programming: Python, TensorFlow, Keras, MATLAB, C, Apache Spark

Course work in audio/image signal processing, machine learning, optimization, music perception. Attended machine learning (MLSS 2017) and 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

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

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

Performed and devised several vocal stage programs / Lead group member for vocals, 2006–2010

Theatre Participated in several English and Hindi plays

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

Patents and Publications

Filed Patents

1. **Sanjeel Parekh**, Slim Essid, Alexey Ozerov, Ngoc Duong, Patrick Pérez and Gaël Richard. Weakly Supervised Learning for Unsynchronized Audio-Visual Events, 2018.
2. **Sanjeel Parekh**, Slim Essid, Alexey Ozerov, Ngoc Duong, Patrick Pérez and Gaël Richard. New approaches to motion informed audio source separation, 2017. US 15956021

Book Chapters and Journals

1. **Sanjeel Parekh**, Slim Essid, Alexey Ozerov, Ngoc Duong, Patrick Pérez and Gaël Richard. Weakly Supervised Representation Learning for Audio-Visual Scene Analysis. IEEE/ACM Transactions on Audio, Speech and Language Processing 2019 [to appear]
2. Slim Essid, **Sanjeel Parekh**, Ngoc Duong, Romain Serizel, Alexey Ozerov, Fabio Antonacci and Augusto 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. **Sanjeel Parekh**, Alexey Ozerov, Slim Essid, Ngoc Duong, Patrick Pérez and Gaël Richard. Identify, Locate and Separate: Audio-visual object extraction in large video collections using weak supervision. IEEE WASPAA 2019 (**oral**)
2. **Sanjeel Parekh**, Slim Essid, Alexey Ozerov, Ngoc Duong, Patrick Pérez and Gaël Richard. Weakly Supervised Representation Learning for Unsynchronized Audio-Visual Events. CVPR Workshop on Sight and Sound 2018 (**oral**)
3. Jayneel Parekh, Harshvardhan Tibrewal and **Sanjeel Parekh**. Deep Pairwise Classification and Ranking for Predicting Media Interestingness. ACM ICMR 2018 [as an advisor]
4. **Sanjeel Parekh**, Slim Essid, Alexey Ozerov, Ngoc Duong, Patrick Pérez and Gaël Richard. Guiding audio source separation by video object information. IEEE WASPAA 2017
5. **Sanjeel Parekh**, Slim Essid, Alexey Ozerov, Ngoc Duong, Patrick Pérez and Gaël Richard. Motion informed audio source separation. IEEE ICASSP 2017 (**oral**)
6. **Sanjeel Parekh**, Frederic Font and Xavier Serra. Improving Audio Retrieval through Loudness Profile Categorization. IEEE International Symposium on Multimedia 2016 (**oral**)
7. **Sanjeel Parekh** and Pratik Shah. Nyquist filter design using POCS methods: Including constraints in design. IEEE International Symposium on Signal Processing and Information Technology 2014

Theses

1. Learning representations for robust audio-visual scene analysis. PhD Thesis, Télécom ParisTech, Université Paris-Saclay, France 2019
2. Improving audio retrieval through content and metadata categorization. Masters Thesis, Universitat Pompeu Fabra, Spain 2015

Tutorials, Talks and Miscellaneous Presentations

Nov 2019 Delivered a tutorial on Audio-visual Music Processing at ISMIR 2019 with Prof. Zhiyao Duan, Prof. Slim Essid and Bochen Li

2018 Talks about our work on weakly supervised representation learning for AV events
- Centre Henri Lebesgue Workshop on Deep Learning: From Theory to Applications, Rennes, Sept. 2018.
- Telecom Paris IDS Research Day, Paris, Jul 2018

2017 Presented our work on video–informed audio source separation
- SANE Workshop, New York, Oct. 2017.
- MLSS Summer School, Tubingen, Jun. 2017