Satvik Dixit

Email: satvikdixit7@gmail.com | Mobile: +91 9599590926 | LinkedIn Profile

EDUCATION

Indian Institute of Technology (IIT) Delhi

- Bachelor of Technology in Electrical Engineering (May, 2019 - May, 2023)
  - Minor degree in Entrepreneurship
  - Cumulative GPA: 8.77/10.0

PROFESSIONAL EXPERIENCE

MIT Senseable Intelligence Lab

- *Research Intern* *(*May, 2022 - Present)
  - Benchmarking handcrafted and data-driven speech representations on speech emotion recognition task
  - Developing pipelines for getting the performance of different feature extraction models
  - Comparing the performance of handcrafted features (from openSMILE) and data-driven features (from self-supervised learning based models) across multilingual datasets
  - Evaluating the similarity between salient acoustic features and data-driven features [Slides][Code]

EPFL AudioVisual Communications Lab

- *Research Intern* *(*June, 2021 - August, 2021)
  - Advised by Dr. Robin Schleiber and Professor Martin Vetterli (President of EPFL)
  - Worked on Pyroomacoustics: an open source python package for audio room simulation
  - Achieved more accurate Room Impulse Response (RIR) simulations by adding directivities to mics and sources
  - Released in pyroomacoustics 0.5.0 [Demo Notebook]

PROJECTS

Cell-type classification on neurons

- *Bachelor's Thesis at IIT Delhi* *(August, 2022 - Present)*
  - Trying to look at a wide range of neuropixel based metrics to get a fine-grained classification of neurons
  - Analysing metrics based on the waveform (such as duration, amplitude, spread) and firing pattern (such as firing rate, inter-spike interval, burst size and frequency) [Slides]

Implementing Cepstral Peak Prominence (CPP) in Python

- *Research Project at MIT* *(May, 2022 - June, 2022)*
  - Implemented CPP, an acoustic feature extracted from speech, which can be used to predict dysphonia
  - Computed CPP within 10E-07% of the actual values when tested on a diverse set of speech files [Slides][Code]

Analysing brain-state dependence of EEG responses

- *Independent Study at IIT Delhi* *(Jan, 2022 - July, 2022)*
  - Exploring how EEG responses change in specific regions of the brain under different levels of consciousness
  - Implemented dimensionality reduction, clustering and statistical inference testing to identify brain-states
  - Also looked at correlations between different brain regions, dependence of power in various frequency bands

SCHOLASTIC ACHIEVEMENTS

- **IIT-Joint Entrance Exam:** All India rank 1810 in the IIT-JEE out of over 1.2 million candidates | top 0.15% nationally
- **Gold Medal:** Awarded a gold medal by the principal in 12th grade for excellence in academics for 8 consecutive years
- **National Talent Search Exam:** Awarded a two-year scholarship in 10th grade by the government | top 500 in the state

SKILLS

- **Languages:** Python, Java, MATLAB/Octave, LaTeX
- **Softwares/Tools:** NumPy, Pytorch, Jupyter Notebook, Pandas, Git, VS Code

VOLUNTEERING

- **UN Volunteer:** Worked as a UN volunteer with the non-profit ‘eVidyaloka’ for six months to develop science and maths assignments, to be used by 20k+ middle school students every year across 490+ villages
- **Teach For India Volunteer:** Taught mathematics and logical reasoning to a class of 25+ underprivileged 8th grade students over zoom for two months