Statement of Interest

The Indian Institute of Technology Roorkee (IIT Roorkee), is one of the oldest technical Institutes in Asia, and is among the foremost institutes of national importance in higher technological education and in engineering, basic and applied research in the country. Founded as the first engineering college in India in 1847, the institute is celebrating its 175 years of existence in 2022. The institute currently ranks sixth among all engineering institutes in India under National Institutional Ranking Framework (NIRF).

IIT Roorkee is one of the leading research and technological institutes of the world and currently holds Rank # 369 in QSWUR. It hosts students from more than 60 countries in various post-graduate, PhD, semester exchange and institutional internship programs. It has active collaborations (through MoUs/Agreements) in the areas of research, joint degree programs, faculty and student exchange with more than 100 international institutes/universities representing 33 countries of the world. The Institute offers Bachelor's Degree courses in 10 disciplines of Engineering and Architecture and Postgraduate's Degree in 55 disciplines of Engineering, Applied Science, Architecture and planning. The Institute has facilities for doctoral work in all Departments and Research Centers. The Institute, with 500+ faculty, 8000+ students, 600+ administrative and supporting staff, is a self-contained campus.

The Department of Electronics and Communication Engineering was established in 1964. There are 6 programs offered by the Department i.e. BTech, Mtech in Communication, Network & Signal Processing, Mtech in Microelectronics & VLSI, Mtech in RF & Microwave Engineering, Mtech in VLSI for Industry Professionals and PHD with 38 Faculty members, 313 UG students, 75 PG students, 164 PHD Scholars & 46 Research Projects. More details about the department can found at http://ece.iitr.ac.in/

Our group is working in the field of Machine learning and Deep Learning approaches for MEG/EEG signal processing. We have prior expertise in Event Related Potentials and Therapeutic applications of Machine Learning in Healthcare and Neuro-ergonomics. We are also working on Localization, detection and classification of Neurological Disorders such as Epilepsy, Dementia for inter-class and intra-class subjects for MEG and EEG modalities. Our Group also actively participated and have won several international BCI competitions. More details about our research group can be found at https://tharuniitk.github.io/

Prior to this, we have done collaborative research work with Technical University of Crete (TUC) with the team of Prof. Michalis Zervakis on Neurological Disorders and participated in the BIOMAG-2022 International Competition where we used fMRI and MEG modalities. Our collaboration pioneered a novel technique for localization of interictal discharges along with identification of network dynamics for epileptic nodes.

It will be a great opportunity for both the Universities to explore the research and teaching facilities available within each Institute.

Websites of the Institute: https://www.iitr.ac.in

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