Welcome to the IIT Kanpur PYTHON and MATLAB/ OCTAVE-Based Advanced Training School in Orthogonal Time Frequency Space (OTFS) Modulation for 6G Wireless Systems. With 5G systems being rapidly deployed around the globe, there is a significant interest in next generation 6G wireless technologies that break the barriers of 5G. OTFS is a cutting-edge 2D modulation technique that operates in the Delay-Doppler domain, which makes it ideally suited for high mobility and high data-rate 6G networks. This training school will start with a gentle introduction to the basic concepts and feature exhaustive tutorial style lecture modules with the aim of providing the participants a comprehensive exposure to various aspects of OTFS such as System Modeling, Signal Modulation/ De-modulation, Symbol Detection, Channel Estimation and several other analyses, to help kick-start their 6G research/ implementation. The school will also include several intensive supervised PYTHON/ MATLAB/ OCTAVE programming modules so that participants are able to gain practical hands-on experience of working on state-of-the-art 6G projects.

The modules will be held on evenings and weekends. No prior knowledge of PYTHON/ MATLAB/ OCTAVE is required. The school includes introduction to programming in PYTHON/ MATLAB/ OCTAVE, along with TA supervised coding sessions for OTFS projects.

How does this program benefit YOU?

UG/ PG students: Learn the latest 6G technologies and PYTHON/ MATLAB/ OCTAVE programming via hands-on projects to prepare for projects/ placements!

PhD Scholars/ Faculty members: Explore OTFS modulation for research in 6G and create PYTHON/ MATLAB/ OCTAVE-based courses, online labs for students!

Industry Professionals: Master simulation and analysis of 6G OTFS modulation in next generation systems and also gain expertise in practical implementation via PYTHON + MATLAB/ OCTAVE projects!

About the Trainer

Prof. Aditya K. Jagannatham is a Professor in the Electrical Engineering department at IIT Kanpur, where he holds the Arun Kumar Chair Professorship, and is a well known expert and trainer on 5G, Optimization and Machine Learning. He received his Bachelor's degree from the Indian Institute of Technology, Bombay and M.S. and Ph.D. degrees from the University of California, San Diego, U.S.A. From April '07 to May '09 he was employed as a senior wireless systems engineer at Qualcomm Inc., San Diego, California, where he was a part of the Qualcomm CDMA technologies (QCT) division. His research interests are in the area of next-generation wireless networks, with special emphasis on various 5G technologies such as massive MIMO, mmWave MIMO, FBMC, NOMA, Full Duplex and others. He has published extensively in leading international journals and conferences. He has been recognized with several awards including the CAL(IT)2 fellowship at the University of California San Diego, Upendra Patel Achievement Award at Qualcomm, P.K. Kelkar Young Faculty Research Fellowship, Qualcomm Innovation Fellowship (QInF), Arun Kumar Chair and the IITK Excellence in Teaching Award.

Target Audience

- Ph.D. scholars pursuing research in 5G/ 6G technologies
- M.Tech/ B.Tech students undertaking thesis/ projects in Wireless technology
- Faculty members of Engineering Institutions/ Universities
- Engineers from Wireless Industry and R&D Organizations

For more details and registration information, visit the website http://www.iitk.ac.in/mwn/IITK6G/