Introduction
Welcome to the IIT Kanpur Nextgen Training and Research School (NTRS) on PYTHON + R for 5G Wireless Technologies. These latest project-based training programs will feature exhaustive PYTHON + R training modules and daily PYTHON/ R projects for case studies of all the key 5G wireless technologies such as Multi-user, Massive MIMO, mmWave MIMO, NOMA, Cooperative, Cognitive Radio technologies. Participants will also be able to thoroughly learn the modern PYTHON and R programming languages starting from basics. Each theory module will be followed by state-of-the-art PYTHON and R-based projects for design, simulation and analysis of 5G systems. There are a total of 18 PYTHON/ R projects in each program!

Note also that the programs will be held on evenings and weekends for the convenience of students, faculty and working professionals. Distinguished guest lecturers will present their perspectives on the latest R&D in industry and academia. The large number of projects and expertise in PYTHON + R and 5G technology can greatly benefit participants of all backgrounds as described below.

How does this program benefit YOU?
- **UG/ PG students:** Learn the latest programming techniques in PYTHON, R together with principles of 5G technology for projects/ thesis and also gain an edge the job market!
- **PhD Scholars/ Faculty members:** Advance your research to the next level-with PYTHON and R programming skills and also establish labs or guide projects based on PYTHON and R programming for 5G!
- **Industry and R&D personnel:** Enhance your skills by learning about the principles and algorithms for 5G technology along with highly efficient implementation of these technologies using open source PYTHON and R program modules!

Master the latest 5G Technology and PYTHON/ R Programming to advance your career!

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 technologies. He received his Bachelors 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
- UG/ PG Students, PhD Scholars, Faculty and Professionals

For more details and registration information, visit the website [http://www.iitk.ac.in/mwn/NTRS/](http://www.iitk.ac.in/mwn/NTRS/)