Organized by Prof. Aditya K. Jagannatham, EE Department, IIT Kanpur
IITK Research School on
PYTHON/ MATLAB and NYUSIM for Machine Learning (ML) in 5G mmWave MIMO Technology

(October 11th to 28th, 2021)

PYTHON/ MATLAB and NYUSIM for Machine Learning (ML) in 5G mmWave MIMO Technology

Introduction

Welcome to the **IITK Research School** on *Machine Learning (ML) for 5G Millimeter (mm) Wave MIMO Technology*. mmWave MIMO is a key 5G technology that exploits the vast spectrum in the mmWave band (30 – 300 GHz) to achieve up to a 100X increase in data rates. Cutting-edge ML techniques can be used to optimize and substantially boost the performance of mmWave transceivers in 5G systems. This dedicated school aims to systematically introduce the latest applications of ML in high-speed 5G mmWave MIMO technology, via detailed lecture modules followed by hands-on simulation and analysis through PYTHON/ MATLAB projects. Participants will also be exposed to NYUSIM, which is the state-of-the-art simulator for 5G/ 6G mmWave studies.

All modules will be held on evenings and weekends for the convenience of participants. **PYTHON + MATLAB** programming will be explained in detail along with methodologies for building complex research projects and case studies.
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How does this program benefit YOU?

UG/ PG students: Learn *the latest ML/ 5G programming through* **PYTHON MATLAB** for projects/ thesis/ placements!

PhD Scholars/ Faculty members: Create **PYTHON** and **MATLAB-based** courses, online labs or use the knowledge for *projects/ thesis in ML/ 5G* domains!

Industry Professionals: Learn practical **PYTHON + MATLAB** implementation for simulation and analysis of modern ML and 5G systems!

Important Dates

Course Dates
October 11th to 28th, 2021

Last Date for Registration
01st October, 2021

Venue
To be conducted online via Zoom

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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/5GML/