PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement facilitated by the Institute of Smart Structures and Systems

Module PMRF-ISSS022/IV/2025

Large-Scale Linear and Stochastic Optimization Using Python

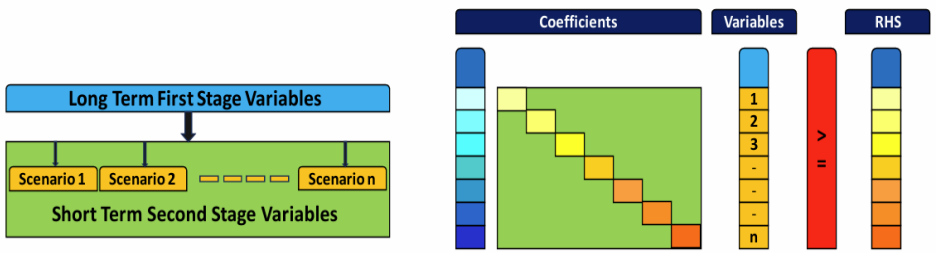
Name of the PMRF student

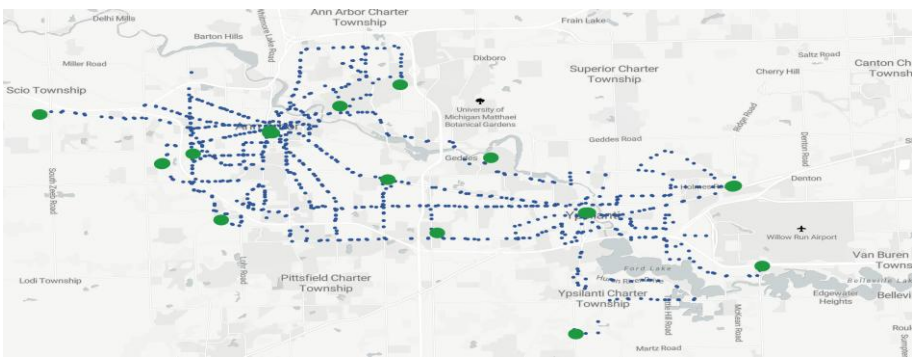
Rito Brata Nath

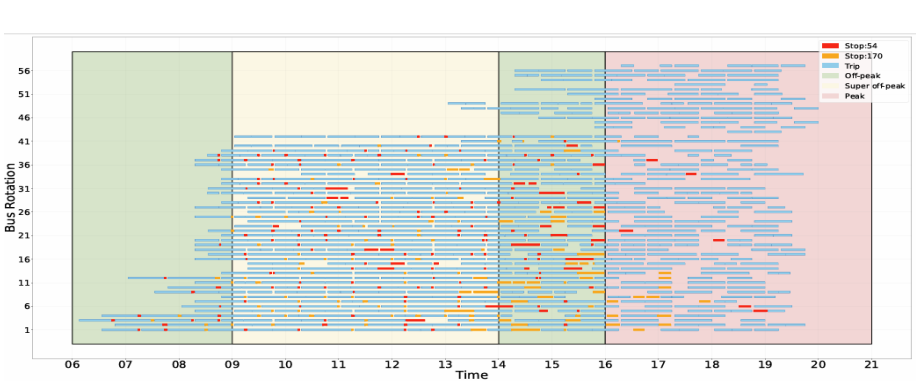
Required background of the students taught

Open to all UG/PG/Ph.D. students interested in Optimization and willing to learn Python. Faculties/Industry Experts are also encouraged to register.

No pre-requisites but background on Linear Algebra and Python programming will be useful.







Details of the content of the module

Module 1: Basics of Linear Programs (LPs)

Module 2: Formulating and Solving Mixed Integer Programs (MIPs) using CPLEX Solver in Python

Module 3: Cutting Plane Methods

Module 4: Column Generation

Module 5: Benders' Decomposition

Module 6: Robust Optimization

Module 7: Heuristics and Metaheuristics

Module 8: Real-World Optimization Problems Using Python

Schedule of the module

Start date: April 19, 2025

Session days: Every Saturday and Sunday, 10:30AM-1:00PM (IST) (Live sessions will be conducted or recorded lectures will be uploaded)

Total number of hours: 15

End date: May 4, 2025 (tentatively)

Meeting link : Will be shared later

Contact email ID: isss.forum@gmail.com & ritobrata3@gmail.com

Registration link:

https://forms.gle/92YUtXEoFx7o5VuLA