PMRF-ISSS Teaching Programme

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

Module PMRF-ISSS086/II/2024

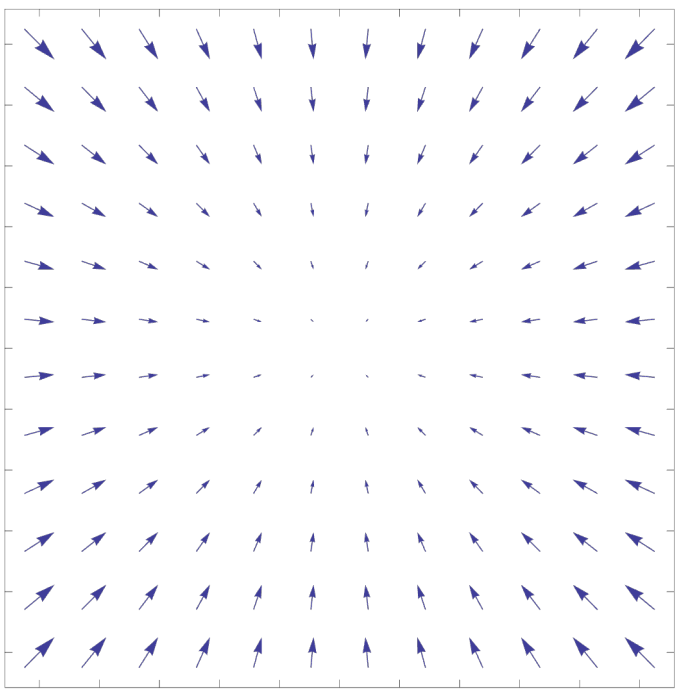
Mathematical Foundations for Learning Equivariant Functions

Name of the PMRF student

Pavan Subhaschandra Karjol

Required background of the students taught

Group Theory, Calculus, Topology



Details of the content of the module

- Smooth Manifolds: Definition and examples of manifolds, Charts and atlases, Transition maps, Differentiability on manifolds, Tangent spaces, Submanifolds, Embeddings and immersions
- Vector Fields and flows: Definition and examples, Integral curves, Local and global flows, Existence and uniqueness of flows, Lie derivative
- Lie Groups: Definition and examples, Matrix Lie groups, Smooth homomorphisms, Group actions on manifolds, Orbits and stabilizers, Quotient manifolds
- Lie Algebra: Lie bracket, Definition and examples, Left invariant vector fields, Exponential map, Fundamental theorems

Schedule of the module

Start Date: June 14, 2024

Details of the content of the module

Live lectures will be conducted (or recorded lectures uploaded) on Friday and Saturday from 5 PM to 7 PM (25 Lectures)

End Date: Tentatively by Sep 15, 2024

Total lecture hours : 50 (approx.)

Meeting link : Will be shared later

Link

Contact email ID: isss.forum@gmail.com

Registration link: https://forms.gle/zT6cAdirJ2qzq46x7