Shouvik Majumder

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EDUCATION

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
Integrated BS-MS Dual degree
4th year - Mathematics Major
Degree Expected: May 2020 | Kolkata.
CGPA: 8.65 | SGPA (last sem): 9.33

RAMKRISHNA VIVEKANANDA MISSION VIDYABHAWAN
2015| Kolkata, India

KNOWLEDGE OVERVIEW

MATHEMATICS

Topics covered in courses or otherwise:
Commutative Algebra • Functional Analysis • Algebraic and Differential Topology • Differential Geometry• Representation (of Finite Groups) • Basic Algebraic Geometry • Complex Analysis (in One Variable) • Network Theory • Probability and Mathematical Statistics

PHYSICS

Special Relativity • Riemannian Geometry • Quantum Mechanics • Thermodynamics and Statistical Physics • Waves and Oscillations • Circuit Analysis

INTER-DISCIPLINARY TOPICS

Evolution and Evolutionary Dynamics• Behavioral Ecology• Behavioral Cognition • Theoretical Neuroscience• Mathematical Modelling • Economics and Financial Mathematics• Convex Optimization

SKILLS

•Good understanding of Algebraic Topology, with data oriented applications. • Hands on experience in applying network theory techniques to analyze experimental data (Ongoing projects) • Basic understanding of Behavioral and Cognitive Neuroscience. • Strong foundation in various fields in math. • Coding in various commonly used languages (C,C++, MATLAB, Python etc.)

EXPERIENCE

INSPIRE FELLOW | DST Inspire fellowship

ANNUAL FOUNDATION SCHOOL | Summer School conducted by the National Centre for Mathematics
Summer 2018, IISER Pune

IFCAM SUMMER WORKSHOP | Summer school on Mathematical Biology and Applied Mathematics
Summer 2018, IISC Bangalore

BASIC ALGEBRAIC GEOMETRY SUMMER SCHOOL | Summer school on Algebraic Geometry and advanced topics in Commutative Algebra
Summer 2018, IISER Pune

VIJYOSHI | National Science Camp conducted by KVPY
December, 2015

WORK AND PROJECTS

NEUROLAB, IISER KOLKATA | Guided by Dr. Koel Das, Department of Mathematics - IISER Kolkata
2019 (ONGOING WORK)

CONVEX ANALYSIS AND OPTIMIZATION | Guided by Dr. Anup Biswas, Department of Mathematics - IISER Pune
Summer 2017

STUDY OF HARMONIC OSCILLATORS AND ISOCHRONOUSITY | Guided by Dr. Ananda Dasgupta, IISER-K
Winter 2015, summer 2016

QUANTUM TUNNELING IN ORGANIC SEMICONDUCTORS | Guided by Dr. Partha Mitra, IISER-K
Winter 2015

RESEARCH INTERESTS

TOPOLOGICAL DATA ANALYSIS (TDA)

Using topological tools such as persistent homology to explore data analysis methods for high-dimensional data and their low dimensional representation.

NEUROSCIENCE

Using TDA algorithms to analyze brain data (fMRI,EEG) to study functional reconfigurations in the brain at various spatiotemporal scales and extracting features.

OTHER INTERESTS

MUSIC

Most of my free time is spent listening to or making music. Deeply interested in many forms and styles of music (But not professionally). Secretary of the Music Club, IISER-Kolkata, for three years.

DRAMA

Interested in theaters and plays. Member Of AARSHI - Drama Club of IISER Kolkata.