AMARDEEPSINGH H KUSHWAH

BS-MS STUDENT @ IISER Kolkata

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EDUCATION

BS-MS Dual Degree Student
Indian Institute of Science Education and Research Kolkata

📅 August 2019 – June 2024   📍 Kolkata, WB, India

- Currently in the fourth year of five-year BS-MS degree, Majoring in Biology with a Minor in Physics.
- CGPA 7.21/10.00

ACADEMIC PROJECTS

Studying Chaos in Rössler System
Reading Project and Presentation

📅 Oct 2022 – Dec 2022

- Qualitative and Numerical Analysis of bifurcations of Rössler System
- It's Application as a central pattern generator (CPG) for generating insect-like walking gait.
- Course project completed under the guidance of Prof. Pradeep Kumar Mohanty, Dept. of Physical Sciences, IISER Kolkata.

The Hodgkin–Huxley model
Reading Project and Presentation

📅 Aug 2022 – Nov 2022

- Understanding Propagation of action potential using a model based on a quantitative description of membrane current.
- Course project completed under the guidance of Prof. Rumi De, Dept. of Physical Sciences, IISER Kolkata.

Studying Flight Initiation Behaviour in Birds
Semester Project

📅 Jan 2022 – May 2022

- Designed a protocol for studying the correlation between the flight initiation distance of birds of different species and their closeness in the phylogenetic tree.
- Collected and performed statistical analysis of the data.
- Lab project completed under Prof. Radhika Venkatesan, Prof. Anandita Bhadra, Prof. Anuradha Bhat , Dept. of Biological Sciences, IISER Kolkata.

Other Works (Simulations) [With links]
Self motivated

📅 May 2022 – Aug 2022

- Active Matter (Phase Transition in a System of Self-Driven Particles).
- Synchronous Fireflies: using Kuramoto model
- Interactive tool for visualizing bifurcation in Rössler system.
- Interactive tool for visualizing Lorenz's strange attractor.
- Educational article explaining Reaction Kinetics (Interactive tool)
- Coin toss simulator (for visualizing binomial distribution)
- Interactive Fringe width calculator for constructing electron diffraction setup @ NLD Lab IISER Kolkata

WORK EXPERIENCE

Head of Web developement
Air-Healthcare: Health-tech startup

📅 Jan 2021 – Jan 2022

- Successfully managed the day-to-day functioning of the company with a team of 4 developers.
- Managed the different aspects of the project such as security and constrained development & running cost.

Secretary
Slashdot: The Coding and Design Club of IISER Kolkata

📅 Oct 2022 – current

- Currently organising various workshops and talks at IISER Kolkata.

PROGRAMMING LANGUAGES

JS ●●●●○

Python ●●●●○

Julia ●●○○○

SKILLS

Data Analysis

- Python: NumPy, Matplotlib
- JS: Plotly, D3 JS, WebGL
- Others: GNU Plot , Origin Lab, Excel

Typesetting tools

- LaTeX, Docs, Markdown, HTML
- Adobe Illustrator, Inkscape, Figma

Web development

- Backend: Node JS, Express JS, Socket IO
- Database: Mongo DB
- Frontend: React JS, HTML, CSS
- Browser-based computing: WebAssembly

Operating Systems

- Windows, Ubuntu-based, Arch-based