Niraj Kushwaha **Male**
Complexity Science Hub Vienna **D.O.B- 24/02/1997**
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Examination	University	Institute	Year Passed	CGPA/%
MSc- Physics	Indian Institute of Technology	Indian Institute of Technology	2020	8.22 / 10
BSc(Honours)-Physics	BHU	Institute of Science, BHU	2018	6.54 / 10
Intermediate/+2	CBSE	Atomic Energy Central School	2014	83 / 100
Matriculate	CBSE	Atomic Energy Central School	2012	93 / 100

Other Academic Achievements

- I was one of the **top 1% national level toppers (All India Rank=66)** in **National Graduate Physics Examination-2018**.
- Secured **All India Rank=432** in the **national entrance exam** for the Indian Institute of Technology in 2018.
- Won **Gold medal** in **National Science Olympiad** conducted by All India Science Teacher's Association.
- Won 1st prize in school science exhibition 3 times and 2nd prize 2 times.

Positions of responsibility

- Was appointed as a **Climate Counsellor** by **International Centre for Culture and Education, UN** for the climate change program.
- Organizer of **National Science Day 2020** event at the **Indian Institute of Technology, Indore**.
- Was house sports captain in class 9th and house captain in class 11th.

Projects/Work Experience

- Completed my MSc project thesis in the field of **Complexity science, Network science and Non-Linear Dynamics and modelling** under the guidance of **Prof. Sarika Jalan** at the **Complex Systems Lab** at **IIT-Indore**.
  Topic of my thesis was **"Engineering Chimera and Novel Technique Based on Machine Learning"**.
- I completed two Machine learning projects on the topics "**Crop classification using satellite imagery**" and "**Credit card fraud detection"** as part of the course CS 403/603(Machine Learning) at the Indian Institute of Technology, Indore.
  The data that I used for the first project came from USGS and USDA. I used decision tree, random forest and support vector machine algorithm to perform classification of crops by looking at the satellite images of farmlands.
  The data that I used for the second project came from "kaggle.com". I used SVM and logistic regression to identify if a transaction was fraudulent or not based on 30 different features.

- Completed a winter research project at the **Bhabha Atomic Research Centre- Mumbai** under the guidance of **Dr. KK Yadav** in December 2018.
  During this internship I worked on two things-

1- I was involved in theoretical derivation/calculations done for **supernova synchrotron radiation in non-uniform magnetic fields.**
2- I was also involved in **data analysis of radiation data** from "**Major Atmospheric Cerenkov Experiment Telescope**".

Conferences and Summer Schools

1) Gave a talk in **CCS2020** Conference on "Machine Learning assisted Chimera states in Networks".
2) Attended **GIAN workshop** on "Network Science- from structure to dynamics" at IIT Indore.
3) Attended "**The Great Resignation Workshop**" at CSH Vienna.
4) Will be attending the **BIGSSS CSS summer school 2022** at the University of Groningen.
5) Accepted for poster presentation at the **IC2S2 conference 2022** taking place in Chicago.

Publication(s) and Thesis

1) Niraj Kushwaha, Naveen Kumar Mendola, Saptarshi Ghosh, Ajay Deep Kachhvah and Sarika Jalan. Machine Learning assisted Chimera and Solitary states in Networks. Frontiers in Physics, 9, 147 (2021). DOI: 10.3389/fphy.2021.513969

2) Kushwaha, Niraj, *Engineering Chimera and Novel Technique Based on Machine Learning*., MSc Thesis, Discipline of Physics, IIT Indore, dspace.iiti.ac.in:8080/jspui/handle/123456789/2545.

Skills

- Programming languages-
  1- Python(Preferred Language)
  Experience with python packages- Numpy, Pandas, Scikit-learn, Tensorflow, matplotlib, NetworkX etc.
  Github: https://github.com/NirajKushwaha
  2- C++
  3- MATLAB
- Cytoscape
- Video/movie editing using Adobe Premier Pro.
- Language Skills- English (Duolingo English proficiency test score: 145/160), Hindi

Extra courses

- Completed an online course by University of Pennsylvania titled "**Network Dynamics of Social Behaviour**".
- Completed an online course by Cornell University titled "**Problem-Solving with Machine Learning**".
- Completed online course by Stanford University titled "**Machine learning by Dr. Andrew Ng"**.
- Attended workshops on Machine learning as part of **Google's Explore ML Program** at IIT-Indore**.**
- Scored 92.8% in online course by Tokyo University titled "**From big bang to dark energy by Prof. Hitoshi Murayama**".
- Scored 80% in an online course on "Digital media marketing" by Internshala.
- Completed course titled "**Social Norms, Social change**" by **UNICEF**.