NIRAJ KUSHWAHA

BASIC INFO

DOB 24/02/1997

E-mail kushwaha@csh.ac.at / nirajkkushwaha1@gmail.com

Website https://nirajkushwaha.github.io/ (gets updated more frequently than this CV)

LinkedIn https://www.linkedin.com/in/niraj-kushwaha-8a2766114/

Twitter https://twitter.com/nirajkkushwaha

CURRENT POSITION

RESIDENT SCIENTIST / PHD CANDIDATE **2021-**

Complexity Science Hub Vienna | *Josefstädter Str. 39, 1080 Vienna*

(Supervisor: Dr. Edward D. Lee, Prof. Stefan Thurner)

- Discovering mesoscale for chains fo armed conflicts
- Building dynamical models to explain population-level scaling in sessile organisms
- Joint affiliation with the Department of Physics, University of Vienna (Supervisor: Prof. Christoph Dellago)

EDUCATION

MSc. in PHYSICS **2018-2020**

Indian Institute of Technology (IIT) Indore | *Khandwa Rd, Simrol, Madhya Pradesh 453552*

- Thesis topic: "Engineering chimera and novel technique based on machine learning"
- Minor project on, "Crop classification using satellite imagery"
- Minor project on, "Credit card fraud detection"

BSc. in PHYSICS (HONS.) **2015-2018**

Institute of Science- BHU | *Ajagara, Varanasi, Uttar Pradesh 221005*

High school diploma **2014**

Atomic Energy Central School | *Tarapur, India*

INTERNSHIP

MASTER THESIS INTERN **2019-2020**

Complex Systems Lab, IIT Indore | *Khandwa Rd, Simrol, Madhya Pradesh 453552*

(Supervisor: Prof. Sarika Jalan)

- Worked on my master thesis for a year

WINTER INTERN **2018**

Astrophysical Sciences Division, Bhabha Atomic Research Station | *Anushaktinagar, Mumbai - 400 094*

(Supervisor: Mr. Bitan Ghosal)

- Main project topic: "Synchrotron emission by charged particles in a non-uniform magnetic field"
- Minor project on data analysis of radiation data from "Major Atmospheric Cerenkov Experiment Telescope"

ACHIEVEMENTS

National level exams

- Top 1% national level toppers (All India Rank=66) in National Graduate Physics Examination-2018
- All India Rank=432 in the national entrance exam for the Indian Institute of Technology in 2018

Awards

- Significant Milestone Award of the 2023 Exner Lectures in the category of PhD by The Exner Foundation
- Gold medal in National Science Olympiad conducted by All India Science Teacher's Association

PUBLICATIONS

Articles

Kushwaha, Niraj and Edward D Lee (Aug. 2023). "Discovering the mesoscale for chains of conflict". In: *PNAS Nexus* 2.7, pgad228. ISSN: 2752-6542. DOI: 10.1093/pnasnexus/pgad228.

Kushwaha, Niraj, Naveen Kumar Mendola, Saptarshi Ghosh, Ajay Deep Kachhvah, and Sarika Jalan (2021). "Machine learning assisted chimera and solitary states in networks". In: *Frontiers in Physics* 9, p. 513969.

CONFERENCES

THE GERMAN PHYSICS SOCIETY MEETING **2024**

Berlin, Germany

- Gave a talk on "Conflict Classification Using Multinomial Mixture Models and Conflict Avalanches"

CONFERENCE ON COMPLEX SYSTEMS **2023**

Salvador, Brazil

- Gave two talks, "From Narrative to Systematic Scales of Conflicts" and "Systematic Procedure for Extracting Causal Connections in Conflict Cascades"

NETSCI **2023**

Vienna, Austria

- Volunteer with the organization team.

THE GERMAN PHYSICS SOCIETY MEETING **2023**
Dresden, Germany

- Gave a talk on "Population waves in sessile organisms"

CONFERENCE ON COMPLEX SYSTEMS **2022**
Palma de Mallorca, Spain

- Gave a talk on "Multiscale causal structure in armed conflicts"
- Presented a poster

THE GERMAN PHYSICS SOCIETY MEETING **2022**
Regensburg, Germany

- Gave a talk on "Multiscale causal structure in armed conflicts"

CONFERENCE ON COMPLEX SYSTEMS **2020**
Online

- Gave a talk on "Machine Learning assisted Chimera states in Networks"

HARVARD COLLEGE US-INDIA INITIATIVE **2017**
Mumbai, India

- Delegate

SCHOOLS AND WORKSHOPS

LIPARI SCHOOL ON COMPUTATIONAL COMPLEX AND SOCIAL SYSTEMS **2023**
Lipari, Italy

LIPARI SCHOOL ON COMPUTATIONAL COMPLEX AND SOCIAL SYSTEMS **2022**
Lipari, Italy

BIGSSS SUMMER SCHOOL IN COMPUTATIONAL SOCIAL SCIENCE **2022**
Groningen, Netherlands

- Project topic: "Dynamical reciprocity in office spaces"

THE GREAT RESIGNATION WORKSHOP **2022**
Vienna, Austria

GLOBAL INITIATIVE OF ACADEMIC NETWORKS (GIAN) WORKSHOP **2018**
Indore, India

- Topic of workshop: "Network Science- from structure to dynamic"

MEDIA

Articles

- The Military's Recruitment of AI Has Already Begun
- Forscher beobachten "Lawinen" bei Ausbreitung bewaffneter Konflikte
- Scientists develop method to predict the spread of armed conflicts

Audio/Video

- Gave a live interview at the BBC newsday radio show.
- Our paper was featured in Sabine Hossenfelder's science news.

OTHER ACTIVITIES

Volunteering work

- Started an NGO with college friends at BHU to educate underprivileged kids in Varanasi
- Worked as a climate counsellor for the International Centre for Culture and Education
- Volunteer at the Buddy Project, Vielmehr für Alle! in Vienna

Online Courses

- "Network Dynamics of Social Behaviour" by University of Pennsylvania
- "From big bang to dark energy by Prof. Hitoshi Murayama" by University of Tokyo
- "Social Norms, Social change" by UNICEF
- "Digital media marketing" by Internshala