

N I R A J

KUSHWAHA

BASIC INFO

DOB	24/02/1997
E-mail	kushwaha@csh.ac.at / nirajkushwaha1@gmail.com
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CURRENT POSITION

RESIDENT SCIENTIST / PHD CANDIDATE	2021-
<i>Complexity Science Hub Vienna</i> <i>Josefstädter Str. 39, 1080 Vienna</i> (Supervisor: Dr. Edward D. Lee, Prof. Stefan Thurner)	
<ul style="list-style-type: none">• Discovering mesoscale for chains of 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
<i>Indian Institute of Technology (IIT) Indore</i> <i>Khandwa Rd, Simrol, Madhya Pradesh 453552</i>	
<ul style="list-style-type: none">• 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
<i>Institute of Science- BHU</i> <i>Ajagara, Varanasi, Uttar Pradesh 221005</i>	
High school diploma	2014
<i>Atomic Energy Central School</i> <i>Tarapur, India</i>	

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

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 <i>Palma de Mallorca, Spain</i>	2022
	<ul style="list-style-type: none"> • Gave a talk on "Multiscale causal structure in armed conflicts" • Presented a poster 	
	THE GERMAN PHYSICS SOCIETY MEETING <i>Regensburg, Germany</i>	2022
	<ul style="list-style-type: none"> • Gave a talk on "Multiscale causal structure in armed conflicts" 	
	CONFERENCE ON COMPLEX SYSTEMS <i>Online</i>	2020
	<ul style="list-style-type: none"> • Gave a talk on "Machine Learning assisted Chimera states in Networks" 	
	HARVARD COLLEGE US-INDIA INITIATIVE <i>Mumbai, India</i>	2017
	<ul style="list-style-type: none"> • Delegate 	
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	LIPARI SCHOOL ON COMPUTATIONAL COMPLEX AND SOCIAL SYSTEMS <i>Lipari, Italy</i>	2023
SCHOOLS AND WORKSHOPS	LIPARI SCHOOL ON COMPUTATIONAL COMPLEX AND SOCIAL SYSTEMS <i>Lipari, Italy</i>	2022
	BIGSSS SUMMER SCHOOL IN COMPUTATIONAL SOCIAL SCIENCE <i>Groningen, Netherlands</i>	2022
	<ul style="list-style-type: none"> • Project topic: "Dynamical reciprocity in office spaces" 	
	THE GREAT RESIGNATION WORKSHOP <i>Vienna, Austria</i>	2022
	GLOBAL INITIATIVE OF ACADEMIC NETWORKS (GIAN) WORKSHOP <i>Indore, India</i>	2018
	<ul style="list-style-type: none"> • Topic of workshop: "Network Science- from structure to dynamic" 	
OTHER ACTIVITIES	<hr/>	
	Volunteering work <ul style="list-style-type: none"> • 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