Nishant N. Uchale

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○ https://github.com/nishant-uchale   in https://www.linkedin.com/in/nishant-uchale-364a9a200/

Education

Master of Science (Atmospheric Sciences),   09/2021 – 06/2023
Savitribai Phule Pune University, 9.72 CGPA.   Pune, India

Bachelor of Science (Mathematics),   07/2018 – 07/2021
Sir Parshurambhau College, Savitribai Phule Pune University, India, 85.0%   Pune, India

Research Experience

Visiting Research Student, *International Centre for Theoretical Sciences (ICTS)*   08/2024 – present
Tata Institute of Fundamental Research (TIFR)   Bangalore, India

Research Student, *Centre for Applicable Mathematics*   02/2024 – 07/2024
Tata Institute of Fundamental Research (TIFR)   Bangalore, India

Project Research Assistant, *Interdisciplinary Program in Climate Studies,*   08/2023 – 01/2024
Indian Institute of Technology (IIT) Bombay   Mumbai, India

Master's Thesis, *Centre for Climate Change and Research (CCCR),*   07/2022 – 05/2023
Indian Institute of Tropical Meteorology (IITM)   Pune, India

Projects

Energy Transfers in Internal wave continuum in oceans,   02/2024 – Present
Wave-wave interactions at sub-mesoscales in oceans
Supervisor: Prof. Jim Thomas

Climate Risk Analysis to infer near surface temperature and other climate   08/2023 – 01/2024
variables, *Understanding the physical relationship between humidity and
temperature determining temperature extremes*
Principal Investigator: Prof. Vishal Dixit

Characteristics and projected changes in daily maximum precipitation across the   01/2023 – 01/2024
globe, *Extended Master's Project*
Manuscript submitted to Quarterly Journal of RMeS.
Supervisor: Dr. Bhupendra Bahadur Singh

Skills

Python (Xarray, Scikitlearn, Metpy, Mpi4py)   **Weather Research and Forecast (WRF) Model**
Computational Programming and Visulization   *Installation and Simulation*

Parallel Programming MPI   **Git/Github/Linux**
For efficient and fast computations   *Repositories (Fortran, Python, Shell Scripting)*

Fortran, CDO   **DNS models**
Computational Programming   *Development and Simulation*

Datasets   **Latex, MS Office**
First Hand Experience: CMIP6 Model Outputs,   *Documents and Presentations*
*Reanalysis Datasets (ERA-5, NCEP), Satellite Data
(MODIS), Ground station data (IMD).*

Interests

Research
Atmospheric and Ocean Dynamics, Geophysical and Computational Fluid Dynamics, Atmospheric Thermodynamics, Synoptic & Tropical Meteorology, General Circulation, Climate Modelling.

Other
Football, Chess, Trekking, Singing, Teaching, Cycling, Travelling, Painting.

Seminars

- Participated in the workshop "Theoretical and Practical Perspectives in Geophysical Fluid Dynamics" at ICTS.
- Attended the "Geophysical Flows: From the Field to the Lab" Discussion Meeting organized by IIT Madras.
- Attended a Brainstorming Discussion - "Improving Monsoon Forecasts in a Changing Climate", IITM, Pune.
- Attended the "Prof Ananthakrishnan Colloquium" by Prof. Eugenia Kalnay titled "Can we improve substantially weather forecasts without cheating?" which focused on new applications of modern Data Assimilation to improve both observations and model.
- Attended the online lecture series "Atmospheric and Climate Dynamics" and "The Art of Climate Modelling" by Paul A. Ullrich, University of California, Davis.

Activities

- Attended and volunteered IITB-Standford workshop: Organized between Interdisciplinary Program for Climate Studies and Doerr School of Sustainability.
- Delivered a Cloud Physics seminar on "Mesoscale Convective Systems" in Savitribai Phule Pune University
- Delivered a group seminar on 'Middle Atmospheric Structure, Composition and Circulation' in Savitribai Phule Pune University.
- Presented a Wave Dynamics seminar on 'Rossby Waves' in Savitribai Phule Pune University.
- Presented thesis work regularly in weekly meetings at the Centre for Climate Change and Research, IITM, Pune.

Certificates

IMPRESS 2023 Workshop Program — *Organized by the Indian Institute of Geomagnetism, Navi Mumbai, India* •

Annual Monsoon Workshop and National Symposium 2023 — *3rd prize in oral presentation: "Challenges in Climate services for health sector in the warming environment" organized by the Indian Meteorological Society* •

Applications Oriented WRF Training School — *Centre for Development of Advanced Computing, NSM, IMD* •

TROPMET-2023 — *Poster Presentation: "Changing Dynamics of Arid Region and Impact o Weather and Climate over Indian Sub-continent"* •

Attending courses at Centre for Atmosphere-Ocean Sciences (CAOS), IISc Bangalore, India — *Atmospheric Dynamics, Environmental Fluid Dynamics*

Referees

Dr. Bhupendra Bahadur Singh, *Scientist-E,*
Centre for Climate Change and Research (CCCR), Indian Institute of Tropical Meteorology (IITM), Pune, India
bhupendra.cat@tropmet.res.in

Prof. Anandakumar Karipot, *Head of the Department,*
Department of Atmospheric and Space Sciences, Savitribai Phule Pune University (SPPU), Pune, India
akaripot@unipune.ac.in

Prof. Pradeep Kumar Pallath, *Emeritus Professor (Retired Senior Professor and Head),*
Department of Atmospheric and Space Sciences, Savitribai Phule Pune University (SPPU), Pune, India
ppk@unipune.ac.in