

Sudhanshu Kumar

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Education

Degree	Specialization/Board	Institute	CGPA/Marks	Year
M.Tech	Earth System Science and Technology	IIT Kharagpur, India	9.36/10	2020-22
B.Tech	Mechanical Engineering	IIT BHU Varanasi, India	7.77/10	2013-17
10+2	CBSE	K N Memo Academy, India	84.8%	2013
10th	CBSE	SKP Vidya Vihar, India	9.8/10	2011

Technical Skills

- o Languages: Python, FORTRAN (basics)
- o Software Packages: Microsoft Office (word, Excel, PPT), MATLAB, AutoCAD.

Publications

- o Behera MD, Mudi S, Shome P, Das PK, Kumar S, Joshi A, Rathore A, Deep A, Kumar A, Sanwariya C, Kumar N. COVID-19 slowdown induced improvement in Air quality in India-Rapid assessment using Sentinel-5P TROPOMI data. Geocarto International. 2021 Oct 14:1-7.
- o Kumar S, Chandrakar R and Chakraborty A. Analysis of marine heat waves in Palk Strait region in the recent period. Journal of Operational Oceanography. 2022 Feb: *Submitted for peer-review*.
- o Sharma RK, Kumar S and Padmalal D. Streamflow prediction using machine learning models in selected rivers of Southern India. Natural Hazards. 2022 Mar: *To be submitted for peer-review*.

Research Projects

M.Tech Thesis IIT Kharagpur, India Aug 2021-Present

Supervisor: **Prof. Arun Chakraborty**

- o Analysis of Marine Heat Waves in tropical Northern Indian Ocean.
- o Analysing daily data (1982-2021) in Python for temperature anomalies and their influences on regional climate.

Collaborative research project National Center for Earth Science Studies, Kerala Apr-Jul 2021

Supervisor: **Dr. Rajat K Sharma**

- o Predicted streamflow in three rivers using rainfall, max. and min. temperature as input variables.
- o Compared three Machine Learning models' performance on 35 years time-series data at daily and monthly scales.

Research Internship National Geophysical Research Institute May-Jun 2021

Supervisor: **Dr. Radheshyam Yadav**

- o Worked on a project on Geodynamic modelling using 'Aspect'-A mantle convection software.
- o Simulated a 2D model and visualised how crust & mantle fluid density and temperature change with time.

Collaborative research project IIT Kharagpur, India Jan-Apr 2021

Supervisor: **Prof. MD Behara**

- o Co-authored a project titled "COVID-19 slowdown induced improvement in Air quality in India - assessment using Sentinel-5P TROPOMI data".
- o Observed change in the trend of seven important atmospheric variables using Google Earth Engine platform.

B.Tech Project IIT BHU Varanasi, India Aug 2016-Apr 2017

Supervisor: **Prof. R K Gautam**

- o Development of porous alumina coating using two-step anodisation on aluminium substrate.
- o Involved usage of SEM for determining pore diameter and inter-pore distance, scratch tester for wear rate comparison, vikers hardness test for measuring the improved microhardness.

Work Experience

PG Department Representative

IIT Kharagpur, India

Aug 2021-Present

- o Liaison between professor & students, being their point of contact for academic & extra-curricular endeavors.
- o Helping PG students with academic and administrative issues, and working for constructive changes.

Centre for Social Responsibility and Leadership (CSRL), Delhi

Jul 2019-Aug 2020

Academic Officer (Reporting to Executive Director and Academic Advisor)

- o Part of **physics** practice/test-paper development team and reviewing test results.
- o Managing Academic Operations of twenty-four Super30 projects running at different locations pan India.
- o Part of the faculty recruitment process and students' selection & final admission process of each project.

Teaching Experience

Academic Officer (Project)

OMC Super 30, Bhubaneswar (a unit of CSRL)

Jul 2017-Jun 2019

- o Teaching **Physics** at 10+2 level and conducting doubt clearing sessions for 85 students.
- o Mentoring, helping students in completing assignments and conducting chapterwise tests.

Teaching Assistant

Indian Institute of Technology (IIT)

- o *Responsibilities* : Assisting professors in designing the course, conducting quizzes, evaluating assignments and guiding academically under-performing students through after-class discussions.

1. CL-60003 Advance Meteorology (Postgraduate Level Course)

IIT Kharagpur, Aug 2021 - Dec 2021

2. ME-1201 Engineering Mechanics (Undergraduate Level Course)

IIT BHU Varanasi, Aug 2015 - Dec 2015

Industrial Internships

JCB India Limited, Haryana

May-Jul 2016

- o Worked on a project on shifting of 3CX model backhoe from old assembly line to new assembly line.
- o Proposed a revised plan for manpower allocation and material representation.

Kota Thermal Super Power Plant, Rajasthan

May-Jun 2015

- o An overview on working of Boilers, Coal and Ash Handling Plant and various other elements of the power plant.
- o Calculated thermal efficiency, major heat loss, and pollution caused by the plant.

Achievements / Extra Curricular Activities

- o Awarded with M.Tech Assistantship (2 years masters course) by Ministry of Education, Govt. of India.
- o Awarded with MCM Scholarship (4 years in undergraduate), given to top 15% students by MHRD, Govt. of India.
- o Worked as a volunteer in the management team of Convocation 2021 at IIT Kharagpur.
- o Conducted workshops, and counselling sessions in various schools of Odisha for creating awareness about the need for higher education (2017-19).
- o Coordinator in COMET'16, the departmental conference of Mechanical Engineering, IIT BHU Varanasi (2015-16).
- o Co-coordinator of AMC (aero-modelling club) IIT BHU Varanasi, conducted workshops/tests (2014-15).
- o Member of 'Kashi Uttharth', a student-run social organization working for the betterment of underprivileged people in nearby areas of IIT BHU Varanasi (2013-14).

Personal Information

o Gender: Male

o Nationality: Indian

o Father: Srinarayan Lal Baranwal

o Date of Birth: Apr 02, 1996

o Languages: English, Hindi

o Mother: Pushpa Lal Baranwal

I hereby declare that the information given above is precise and true to the best of my knowledge