Dr. Sindhu Kalimisetty

Researcher | Remote Sensing, GIS, and Flood Modelling Expert

@ [redacted] in [redacted]

[redacted] Juelich, Germany

Career Objective

Researcher with a Ph.D. in Civil Engineering and eight years of experience, specializing in Remote Sensing, GIS, and Flood Modelling. Seeking a challenging position to leverage my research experience and contribute to impactful and innovative projects.

Technical Skills

Professional skills	**Hydrological Modelling**, **Hydrodynamic Modelling**, **Satellite Data Processing**
Remote Sensing/GIS tools	ArcGIS, QGIS, ERDAS IMAGINE, AutoCAD
Hydrological/Hydraulic Modelling tools	HEC-HMS, HEC-RAS, MIKE Hydro River, MIKE 11, MIKE 21FM, MIKE Flood, SWAT
Professional development	Neural Networks and Deep Learning (Course Certificate authorized by DeepLearning.AI in 2024)
Scripting Languages	Python, MATLAB
Operating systems	Windows, Linux

Professional Experiences

Sep 2024 - till date — **Fellowship, Research Institute for Geo-Hydrological Protection, National Research Council, Italy.**

- Improving the reconstruction of the hydrological cycle through satellite observations.
- Development and implementation of integrated hydroogical framework to simulate both the natural and anthropogenic influences on basin's water cycle.

May 2021 - Aug 2023 — **Hydrology Expert, Vassar Labs Pvt. ltd, India.**

- Hydrological and hydraulic modelling, and reservoir optimization of major basins of India.
- Near real time flood forecasting.
- Dissemination of flood forecast bulletin to provide decision support for disaster management authorities.

Apr 2018 - Apr 2021 — **Senior Research Fellow, Disaster Management Support Group, NRSC, ISRO, India.**

- Development of flood early warning models.
- Development of spatial flood inundation models.
- Coupling of 1D and 2D hydrodynamic models.
- Generation of flood inundation scenarios for different flood return periods.
- Operation of flood forecast models in real time.

Apr 2016 - Apr 2018 — **Junior Research Fellow, Disaster Management Support Group, NRSC, ISRO, India.**

- Impact assessment of watershed management practices on catchment hydrology and soil erosion.
- Examination of various hydrological models to understand their response at small catchment scale.
- Analysis of spatial and temporal effects of land use/land cover.
- Hydrological modeling of transboundary rivers of India.

Jul 2015 - Apr 2016 — **Assistant Professor, Anurag Group of Institutions, India.**

- Teaching experience in Engineering Hydrology, Remote Sensing and GIS subjects.
- GIS Lab instructor

Scientific Projects

National Hydrology Project (NHP) : Flood Early Warning System

Integrated Watershed Mangement Programme (IWMP) : Impact Assessment of Watershed Management Practices

Earth Observation Application Mission (EOAM) : Hydrological Modelling of Transboundary Rivers

Education

2017-2023 **Ph.D** in **Civil Engineering**
Andhra University-National Remote Sensing Centre (NRSC),
Indian Space Research Organisation (ISRO), India.
Thesis : Spatial Flood Early Warning System using Hydrodynamic Modelling Approach for the Godavari Basin

2013-2015 **Master of Technology** in **Remote sensing and GIS**,
National Institute of Technology, India
Thesis : Hydrological and Hydrodynamic Modelling of Brahmani-Baitarani River Basin

2009-2013 **Bachelor of Technology** in **Civil Engineering**,
Jawaharlal Nehru Technological University, India

Publications and Conferences

Sindhu Kalimisetty, Serena Ceola, Irene Palazzoli, Alberto Montanari, Paolo Stocchi, Silvio Davolio and Stefania Camici (2025) **Improving the Reconstruction of the Hydrological Cycle through Satellite Observations : The Case Study of the Po River Basin**, Living Planet Symposium 2025 by the European Space Agency, Vienna, Austria

Sindhu Kalimisetty, Serena Ceola, Irene Palazzoli, Alberto Montanari, Paolo Stocchi, Silvio Davolio and Stefania Camici (2025) **Improving the Reconstruction of the Hydrological Cycle through Satellite Observations : The Case Study of the Po River Basin**, European Geospatial Union (EGU) General Assesmbly 2025, Vienna, Austria

K Sindhu, Amanpreet Singh, K H V Durga Rao, & Vazeer Mahammood (2023) **Hydrodynamic modelling approach for scientifc assessment of food-prone areas at basin scale**, Modeling Earth Systems and Environment, https://doi.org/10.1007/s40808-023-01820-4

Sindhu Kalimisetty, Amanpreet Singh, Durga Rao Korada Hari Venkata, Venkateshwar Rao V & Vazeer Mahammood (2021) **1D and 2D model coupling approach for the development of operational spatial flood early warning system**, Geocarto International, https://doi.org/10.1080/10106049.2021.1886335

Sindhu K. & Durga Rao K. H. V. (2017) **Hydrological and hydrodynamic modelling for flood damage mitigation in Brahmani–Baitarani River Basin**, India, Geocarto International, 32:9, 1004-1016, http://dx.doi.org/10.1080/10106049.2016.1178818

K.Sindhu & K.H.V.Durga Rao, **Soil Loss Prediction for Salebhata Catchment in Odisha State using Revised Morgan-Morgan Finney Model**, 3rd International Conference on Environmental Management, Hyderabad, 2017

K.Sindhu & K.H.V.Durga Rao, **Runoff Estimation at Basin Scale using Space Inputs through Hydrological Modelling Approach**, Geo-Informatics Application in Rural Development, Hyderabad, 2015.

K.Sindhu & K.H.V.Durga Rao, **Hydrological Modelling in Brahmani-Baitarani River Basin**, TROPMET 2015-Weather and Climate Extremes, New Delhi.

References

Dr. KHV. Durga Rao
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