Samvedya Surampudi

Researcher . PhD. Student

Division of Photonics and Microwave

Room 145, Technology Tower, VIT University, Vellore-632014, Tamil Nadu, India

| ✆+91. 7032743734 |

| ✉ samvedya11@gmail.com |

https://www.researchgate.net/profile/Samvedya-Surampudi

Summary

Researcher working the field of Remote Sensing with 6 years of experience in Microwave Remote Sensing and GIS with interlace to hydrological applications. Passionate individual that loves to bring work in the direction that contributes for real time problem solving.

Education

PhD. [Microwave Remote Sensing] 2018-Present

Vellore Institute of Technology, Vellore, Tamil Nadu

***Title**: Hybrid approaches for flood mapping and forecasting using L&C band Synthetic Aperture Radar images: A Case study on Assam floods*

***Supervisor**: Dr. Vijay Kumar [IITB], Associate Professor, DST-SERB Microwave and Radar Imaging Laboratory VIT University, Vellore*

Master of Technology (74.6 %) [Remote Sensing] 2015-2017

Jawaharlal Nehru Technological University, Kakinada, Andhra Pradesh

***Title**: Detection of Internal Waves from Synthetic Aperture Radar images.*

***Supervisors**: Dr. Sasanka Sasamal, Scientist-SF, NRSC, ISRO, Hyderabad.*

Dr. Padma Kumari, Head of the department, School of Spatial Information Technology, JNTU-Kakinada

Bachelor of Technology (80.25 %) [Electronics Engineering] 2011-2015

Kakinada Institute of Engineering and Technology, Kakinada, Andhra Pradesh

***Title**: Accessing AHB Bus using wishbone controller on System on Chip (SoC).*

Research Experience

- Junior Research Fellow in Airborne L&S Band Research announcement (NISAR) project funded by Space Application Center, ISRO under the grant NDM-01. **(Feb,2018 – Mar, 2021)**
- Research Assistant in ALOS-2 project under Research Announcement-2 by Japanese Aerospace Exploration Agency (JAXA). (Non-funded) **(Mar,2019-Mar,2021)**
- Internship **(Aug, 2016-Jun, 2017)** at National Remote Sensing Centre, ISRO, Hyderabad.

Innovations

- **SARFvcVer-1.0** – is a standalone application developed for SAR image classification with reduced false scattering representation in identifying flooded vegetation based on Hybrid Bayesian classifier with Gaussian mixture models. (*https://github.com/samvedya/SAR-flood-mapping*)
- **DFDE**-A Dual Frequency flood Depth Estimation tool using SAR data and DEM. (*https://github.com/samvedya/Flood-Depth-Estimation*)
- Interactive Flood Visualization System for flood Forecasts based on Synthetic Aperture Radar data (*Submitted to National Innovation Repository,* ***Innovation ID: IR2022-794832***)

Publications

Conference Publications

S. Surampudi and S. Sasanka, "Internal Wave Detection and Characterization with SAR data," 2019 ***IEEE Recent Advances in Geoscience and Remote Sensing*: Technologies, Standards and Applications (TENGARSS)**, *Kochi, India, 2019, pp. 104-108, https://doi: 10.1109/TENGARSS48957.2019.8976045.*

S. Surampudi, V. Kumar and K. Yarrakula, "Flood Index Estimation Using L-Band Sar Data for Assam Flood Prone Regions," ***2021 IEEE International Geoscience and Remote Sensing Symposium IGARSS***, Brussels, Belgium, 2021, pp. 8301-8304, doi: 10.1109/IGARSS47720.2021.9554862.

S. Surampudi and V. Kumar, "A new change index for identification of flooding in fully polarimetric SAR data," *2023 International Conference on* ***Machine Intelligence for GeoAnalytics and Remote Sensing (MIGARS),*** Hyderabad, India, 2023, pp. 1-3, doi: 10.1109/MIGARS57353.2023.10064604.

Journal Publications

S. Surampudi and V. Kumar, "Flood Depth Estimation in Agricultural Lands From L and C-Band Synthetic Aperture Radar Images and Digital Elevation Model," in ***IEEE Access***, vol. 11, pp. 3241-3256, 2023, *doi: 10.1109/ACCESS.2023.3234742. [Impact factor-3.47]*

Surampudi, S., Yarrakula, K. Mapping and assessing spatial extent of floods from multitemporal synthetic aperture radar images: A case study on Brahmaputra River in Assam State, India. ***Environ Sci Pollut Res*** 27, 1521–1532 (2020). *https://doi.org/10.1007/s11356-019-06849-6 [Impact factor-5.1]*

S. Surampudi, V. Kumar, "Hybrid Naïve Bayes Gaussian Mixture Models and SAR Polarimetry based automatic flooded vegetation studies using PALSAR-2 data", (Submitted to ***Int. Journal***

of Applied Earth Observation and Geoinformation) (Under Revision) [*Impact factor-7.1]*

S. Surampudi, V. Kumar, "Understanding Brahmaputra Floods: A Comprehensive time series study and forecasting based on SAR data using hybrid machine learning approaches " (Under drafting)

Devaraj, S., Yarrakula, K., Martha, T.R. *et al.* Time series SAR interferometry approach for landslide identification in mountainous areas of Western Ghats, India. *J Earth Syst Sci* 131, 133 (2022). *https://doi.org/10.1007/s12040-022-01876-3* [*Impact factor-1.91]*

Honors and Awards

- Recipient of IEEE GRSS IDEA Microgrants 2023 up to 500USD
- Raman Research Award from Vellore Institute of Technology, Vellore (Year of reception- 2019)
- Junior Research Fellowship from Indian Space Research Organization (Year of reception- 2018)
- Pratibha award of excellence and cash prize from Government of Andhra Pradesh, India. (Year of reception- 2017)
- Champion team in national level mapping competition *Mapthon* conducted by Indian Space Research Organization, IIT Bombay and AICTE. *(https://iitb-isro-aicte-mapathon.fossee.in/results)*
- 3rd place in University rankings in Masters of Technology.
- 2nd place in College rankings in Bachelors of Technology.

Areas of Research Interest

Remote Sensing

- Microwave Remote Sensing for disaster applications
- SAR polarimetry
- Electromagnetic scattering models

Other Areas

- Statistical methods, Deep learning
- Hydrological modeling

Skills

Programming Skills

- Matlab (Advanced)
- Python (Intermediate)
- C# (Beginner)
- HTML

Remote Sensing software

- QGIS, ArcGIS, ERDAS, ENVI, SAGAGIS
- SNAP, PolSARPro
- HecHMS (Hydrological modelling)

Interpersonal skills

- Research and design thinking
- Active listening and strong communication
- Report writing

Training Programs

- Training program on SAR data processing and Analysis for Land Applications from 6-10th August 2018 organized by ***Space Application Centre (SAC), ISRO.***
- NISAR Science workshop 2018 organized by ***Space Application Centre (SAC), ISRO*** from 15th to 17th November 2018.
- Short-term training program on Hydrologic-Hydraulic Modelling of Flash Floods, conducted by ***Indian Institute of Technology, Madras (IITM)*** from 18th to 22nd March 2019.
- 6th Advanced training curse on Radar Polarimetry organized by ***European Space Agency*** (ESA) from 10th to 14th May 2021.

Conferences

- IEEE Recent Advances in Geoscience and Remote Sensing: Technologies, Standards and Applications conference (TENGARSS) held in Cochin, 17th -20th October 2019.
- IEEE Geoscience and Remote Sensing Symposium (IGARSS), 11th -16th July, 2021, held in Brussels, Belgium (Hybrid).
- Geospatial World Forum conference held in Hyderabad from 23rd -25th January, 2017.

Summer Schools

- Attended 12th International Summer School on Radar/SAR, by Fraunhofer Institute for High Frequency Physics and Radar Techniques, (Fraunhofer-Gesellschaft), Bonn, Germany.

Extracurricular Activities

- Diploma in South Indian classical music from Andhra University.
- Invited guest on student podcast show 2AM yaari.

References

Dr. Vijay Kumar	Dr.Sasanka Sasmal	Dr. K. Padma Kumari
Professor, DST-SERB Microwave and Radar Imaging Laboratory, Microwave and Photonics Group, School of Electronics and Communication Engineering Vellore Institute of Technology, Vellore-632014, TN, India Ph: +91 8110019925 +914162202429 (Off) E-mail: vijaykumar@vit.ac.in	Scientist-SG, Ocean Sciences Group, Earth and Climate Science Area (ECSA), National Remote Sensing Center, Dept. of Space, Govt. Of India, Balanagar, Hyderabad – 500037, Telangana, India Email :sasmal_sk@nrsc.gov.in	Head & Professor, School of Spatial Information Technology, Institute of Science & Technology, Jawaharlal Nehru Technological University Kakinada, Kakinada-533003, Andhra Pradesh, India Phone: +91 9959026889 Email : sit.jntuk@gmail.com

Personal Information

Date of Birth	:	11th November 1993
Marital status	:	Single
Gender	:	Female (She/Her)
Category	:	General
Address	:	Flat-D2, Prabhu Apartments, Opposite to VIT 3rd gate, Vellore, Tamil Nadu- 632014

Language		Proficiency
English	-	Full Professional proficiency
Hindi	-	Full Professional proficiency
Telugu	-	Native or Bilingual proficiency
Tamil	-	Elementary Proficiency

Declaration:

I hereby declare that the information mentioned above is true to the best of my knowledge and feel responsible for any corrections if any.