

# Udit Asopa

PhD – Deep Neural Network for InSAR Processing  
JRF – Remote Sensing & GIS  
M. Tech. – Remote Sensing & GIS (Photogrammetry & Remote Sensing)  
PG Diploma – Bio Medical Instrumentation and Health Informatics  
B. Tech. – Electronics & Communication Engineering

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## Education

2020-	<b>PhD (RS &amp; GIS)</b> TU Delft, Netherlands <b>Thesis:</b> Deep Neural Network for InSAR Processing <b>Supervisor:</b> Dr. Ramon F. Hanssen	
2017-19	<b>M. Tech. (RS &amp; GIS)</b> Indian Institute of Remote Sensing, <b>IIRS-ISRO</b> , Dehradun <b>Thesis:</b> PolSAR Tomography for Forest Vertical Profile Retrieval Using Spaceborne SAR data <b>Supervisor:</b> Dr. Shashi Kumar (Scientist E)	80.8%
2011-15	<b>B. Tech. (ECE)</b> Poornima Institute of Engineering & Technology, <b>RTU</b> , Jaipur <b>Project:</b> A Budget Linux Variant Android Operating System Based Ultra Large Digital Touch Screen Ultra Large Classroom Display cum Writing Board for Smart Future Education System (Funded by DST) <b>Supervisor:</b> Mr. Sachin Chouhan (Head – ECE Dept)	64.7%
2010-11	<b>Senior Secondary School (12<sup>th</sup>)</b> CBSE – Physics, Chemistry, Mathematics	64.5%
2008-09	<b>Higher Secondary School (10<sup>th</sup>)</b> RBSE – Science, Mathematics, Computer, English	76.8%

## Courses & Certification

	2020 AWS Sagemaker, AI and Machine Learning – With Python	
	AWS Concepts	
	Amazon Web Services (AWS) – Zero to Hero	
2020	Python for Data Science and Machine Learning Bootcamp	Udemy
	Machine Learning A-Z™: Hands-On Python & R in Data Science	
	Machine Learning with Earth Engine	
	Machine Learning with Python Data Science for beginners	
	Welcome to Sensing Planet Earth - from Core to Outer Space	Chalmers University (via edx.org)
2019	Writing in the Sciences	Stanford University (via coursera.org)
	Introduction to Web Cartography	ETH Zurich (via edx.org)

	Hyperspectral Thermal Image Unmixing	
	A Machine learning approach for Object Parameter Estimation and Discrimination Using Hyperspectral Data	<b>Geo University</b>
2018	The Network Based Method Spectral Unmixing Framework	
	Learn Hyperspectral Remote Sensing from the Scratch	
	Geospatial Modelling for Watershed Management	<b>IIRS Outreach EDUSAT</b>
	Google Earth Engine Training	<b>Google, Earth Outreach</b>
2016-2017	PG Diploma in Bio - Medical Instrumentation & Health Informatics	<b>CDAC, India</b>
2016	Digital Image Processing using MATLAB	<b>Coursera</b>
2013	MATLAB Programming and its Engineering Application	<b>NIT, Raipur</b>

## Research Experience

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- M. Tech. Student, Indian Institute of Remote Sensing, Dehradun**
- Tomographic Profile Retrieval of various Geographical Features
  - SAR Tomographic Processing of both Spaceborne and Airborne SAR Data
  - PSInSAR Processing for subsidence monitoring of natural disaster phenomena and for the monitoring the geographical manmade and natural features
  - Attended UASG-2019 conference at IIT Roorkee, Greater Noida Campus in April, 2019
  - Attended ISPRS TC V conference at IIRS Dehradun in Nov, 2018
  - Attended NISAR Workshop and Meet at SAC Ahmedabad in Nov, 2018
  - Deployment of Corner Reflector for the procedure of calibration of SAR Data
  - Spaceborne and Airborne SAR Data Processing
  - Decomposition of SAR Data for various inferences
  - DEM Generation Using Interferometric SAR Data
  - Worked on Geo Visualization Techniques for a collaborative project works
  - Worked on Web GIS as a part of course work
  - Working experience in Optical Remote Sensing (Hyperspectral & Multispectral)
  - Working Experience in Thermal Remote Sensing
  - Worked upon Atmospheric Correction of Optical Satellite Image
  - Remote Sensing data handling with Programming
  - Data acquisition and processing with various instruments (DGPS, LiDAR, etc.)
- 2017 – 2019 (M.Tech.)**
- PG Diploma Student, Center for Development of Advanced Computing, Mohali**
- Developed a project of Heart Rate Monitor with Oxygen Count in Blood
  - Learned Advanced Methods and Concepts of PCB Designing
  - Learned Embedded System based of ARM Controller
- 2016 – 2017 (PGD)**
- B. Tech. Student, Poornima Institute of Engineering and Technology, Jaipur**
- Experienced in working with various electronic sensors for development in IoT Domain
  - Experience of development of Embedded Systems
  - Experienced in working with Arduino and Raspberry Pi
  - Experienced in processing of electronic data and circuits creations
  - Electronic Circuit Designing for both analog and digital circuits
  - Digital Image Processing using MATLAB
  - Made Blind Stick with SOS functionality
  - Developed a Fingerprint based Security System with Embedded System
- 2011 - 2015 (B.Tech.)**

## Remote Sensing Data Handling Experience

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- **Microwave Remote Sensing Data** – RadarSAT2, TerraSAR-X, ALOS Palsar, Sentinel 1, UAVSAR, etc.
- **Optical Remote Sensing Data** – Sentinel 2, LandsAT, CartoSAT, GeoEYE, etc.
- **LiDAR Data** – IceSAT 1-2, Trimble LiDAR Data, Leica LiDAR Data, etc.
- **DGPS** – Trimble
- **Etc.**

## Research Publication

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- **Asopa, U., Kumar, S., & Thakur, P. K. (2018).** *PSInSAR Study of Lyngenfjord Norway, using TerraSAR – X Data.* In A. S. Kumar, S. Saran, & H. Padaliya (Eds.), *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences* (Vol. IV, pp. 20–23). Dehradun: ISPRS. <https://doi.org/10.5194/isprs-annals-IV-5-245-2018>
- **Asopa, U., Kumar, S. (2019).** *Multi Frequency Polarimetric Decomposition of UAVSAR Data.* UASG 2019, IIT Roorkee, Noida. (*Published*)
- **Gupta, A., Asopa, U., & Bhattacharjee, R. (2019).** *Land Subsidence Monitoring in Jagadhri city using Sentinel 1 data and DInSAR Processing †.* In *2nd International Electronic Conference on Geosciences* (pp. 1–9). Basel, Switzerland: MDPI. <https://doi.org/10.3390/IECG2019-06230>
- **Asopa, U., Kumar, S. (2019).** *SAR Tomographic Exploration of Mondah National Park, Gabon with UAVSAR Data* (*currently in review Stage*)
- **Asopa, U., Kumar, S. (2019)** *Tomographic Reconstruction of UAVSAR Data* (*currently in writing*)

## Professional Research Experience

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**Junior Research Fellow at Centre for Resource Engineering, Indian Institute of Technology - Bombay, India** from Sep 2019 – Feb, 2020

- PolSAR Tomography
- Processing Microwave Remote Sensing based Data with MATLAB and Python
- SAR Data processing for Climate Change study on glacial zones
- Performed Extensive field work in Himalayan snow region for estimation of Snow Parameters using Snow Fork by Toikka (4 Feb – 16 Feb, 2020)
- Attended “**IEEE GRSS Workshop on Microwave Remote Sensing**” organized by [University of Michigan](#) (23<sup>rd</sup> Nov, 2019)
- Attended Course “**Echoes in Space**” by EO-College (ESA)
- Attended “**Advanced Webinar: SAR for Disasters and Hydrological Applications**” organized by [NASA ARSET](#) (3-5 Dec, 2019)

## Professional Experience

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**Associate System Engineer at Aarmon Tech Pvt. Ltd. Jaipur** from Feb - Aug 2017

- Experience includes designing and providing embedded systems solutions and IoT Development
- Providing training on Embedded System Designing in MATLAB under Faculty Development Program (FDP)
- Public Relation Officer

## Software Skills

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- **Satellite Data Processing Tool:** ERDAS Imagine, ENVI, SNAP, PolSAR-Pro, SARSCAPE, SARPROZ, ISCE
- **GIS Software:** Q-GIS, ARC-GIS
- **Programming Language:** Python, C, C++, Embedded C
- **Software Environment:** MATLAB, R
- **Programming Software:** Code::Blocks, Notepad++, NetBeans, Anaconda
- **Designing Tool:** Adobe Photoshop, Google Sketchup, Microsoft Publisher

## Language Skill

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- **Hindi:** Native Proficiency
- **English:** Full Professional Proficiency
- **Spanish:** Beginner Proficiency
- **German:** Beginner Proficiency

## Member of Scientific Society

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- **IEEE, GRSS:** 96810075
- **ISRS:** L5500 (*Life Member*)

## References

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- **Dr. Shashi Kumar**  
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