

## RESOURCE PERSONS

### Dr. Prakash Chauhan

Director, Indian Institute of Remote Sensing (IIRS),  
Indian Space Research Organisation, Department of Space, Govt. of India

### Dr. Gaurav Kumar

Scientist, Regional Remote Sensing Centre – West,  
Indian Space Research Organisation, Department of Space, Govt. of India

### Dr. Tune Usha

Scientist G, Group Head – Coastal Hazards,  
National Center for Coastal Research, Ministry of Earth Sciences, Chennai

### Dr. Vasna Joshua

Scientist C, National Institute of Epidemiology, Chennai

### Dr. Vineet Kumar Kamal

Scientist C, National Institute of Epidemiology, Chennai

### Dr. Surendar

Guest Lecturer, Department of Geography,  
University of Madras, Guindy Campus, Chennai

### Mr. K. S. Sarannithish

Co-Founder and Principal Data Scientist,  
Iceapple Technology Solutions Pvt. Ltd., Chennai

### Mr. K. Aswineshadri

Head of Embedded Practice - Assistant General Manager,  
MothersonSumi Infotech & Designs Limited, Chennai

### Dr. Merin Dickson

Chairperson, Network Cancer Aid & Research Foundation, Kerala

### Mrs. Ananthi Ragupathy

Psychologist, Founder & Director, Happy Motherhood, Chennai

## FOR FURTHER CLARIFICATION CONTACT

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## REGISTRATION

The participants are requested to sign up and register for the programme at ATAL website link:  
<https://atalacademy.aicte-india.org/signup>

**Last date of Registration:  
18.08.2021**



**KCG**  
COLLEGE OF TECHNOLOGY  
(A Unit of Hindustan Group of Institutions)



## *A Five-Day Online Faculty Development Programme on*

# ARTIFICIAL INTELLIGENCE AND GEOSPATIAL TECHNOLOGY IN SURVEILLANCE FOR INFECTIOUS DISEASE

Sponsored by  
AICTE Training and Learning (ATAL) Academy

Organized by  
Department of Electronics and Communication Engineering,  
KCG College of Technology, Chennai -97

**23.08.2021 – 27.08.2021**

## ABOUT KCG COLLEGE OF TECHNOLOGY

KCG College of Technology (A unit of Hindustan Group of Institutions) was established in 1998 to fulfill the vision of Founder-Chairman, Dr. KCG Verghese "To Make Every Man a Success and No Man a Failure". KCG College of Technology is affiliated to Anna University, Chennai and approved by AICTE, New Delhi. The college offers twelve under-graduate and four post-graduate programmes. Six under-graduate programmes (Mech, ECE, CSE, IT, EEE & Aero) have Permanent Affiliation under Anna University. Four under-graduate programmes—Computer Science and Engineering (CSE), Electronics and Communication Engineering (ECE), Information Technology (IT) and Mechanical Engineering – are accredited by the National Board of Accreditation (NBA). The college is accredited by NAAC with A+ Grade. The college has been listed in the 201-250 band among the engineering institutions in India by the National Institutional Ranking Framework (NIRF). Five departments – CSE, ECE, EEE, Mechanical Engineering and Physics – have been approved as research centres by Anna University to offer PhD programmes. The campus of KCG College of Technology is beautifully landscaped in a lush green stretch of land spread over 38 acres at Karapakkam, which is about 10 km from Adyar on the Old Mahabalipuram Road, the IT corridor of Chennai.

## ABOUT THE DEPARTMENT

The Department of Electronics and Communication engineering was started in the year 2001 owing to the huge demand for quality Electronics engineers in this country. It is accredited by NBA in the revised norms since June 2017. It has a Permanent Affiliation to Anna University and recognized as research center for Ph.D / M.S by Research. It has funded and consultancy projects worth Rs. 120 lakhs from leading organisations and core industries such as ICMR, MSME, CVRDE, DST, ISRO, AICTE, and IEEE WIE USA. It has Centre of Excellence in Medical Electronics in collaboration with Robert Bosch – Bangalore. It also has partnership with Electronic For You (EFY), e-Yantra-IIT Bombay, Mathworks, CISCO to offer value added courses in Arduino, Raspberry Pi, Python, IoT, Data Science, MATLAB and Networking. Our students have participated in world's largest Hackathon organized by MHRD & AICTE and won the FIRST prize worth Rs. 1 Lakh for three consecutive years, won third place in Tata crucible hackathon 2019 and winners of IEEE SS12- Project competition and Maker fair competition 2019, held at Green University, Srilanka.

## ABOUT THE PROGRAM

The COVID 19 pandemic awakens the world to incline towards the new technology, re invention, re-imagination which can provide solution to protect the Earth. It's high time to merge the engineering perceptions with the advanced technology and interdisciplinary areas. Geospatial Artificial Intelligence (GeoAI) is an emerging scientific discipline that combines innovations in spatial science, artificial intelligence methods in machine learning (e.g., deep learning), data mining, and high-performance computing to extract knowledge from spatial big data. This FDP paves a pathway to understand the role of GeoAI in building smart city ecosystems, to deliver the importance and approaches of merging geospatial technology with artificial intelligence, cloud computing, mobile computing, and big data analysis for public health surveillance system.

## PROGRAMME CONTENTS

- To put forward the latest research programs for the faculty to suggest approaches on innovative partnerships to deal with satellite technology, climate change and public health.
- To highlight the need of interdisciplinary research in this 21st century with reimagination and re-invention along with Data Science and Artificial Intelligence.
- To spectacle the role of geospatial technology in public health domain, particularly for the infectious disease surveillance and modelling strategies.
- To highlight the importance of Geographic Information System (GIS) and the spatial analytical techniques to provide public health surveillance system.
- To familiarize geospatial technology tools which will facilitate to acquire data that is referenced to the earth and use it for analysis, modelling, simulations and visualization. Based on the result, derive entirely new layers of information by applying sophisticated set of mathematical, statistical, imagery and graphical tools.
- To investigate data using machine learning and deep learning techniques
- To visualize the spatial distribution of disease spread which helps to identify the high risk areas for specific disease and helps to understand the epidemiology of disease over various spatial scales. This visualization provides an evidence base to monitor progress towards health commitments.
- To understand exploratory and confirmatory data analysis to achieve good data visualization with the help of various data visualization tools.
- To realize the need to public health surveillance system in the forthcoming years to protect the earth.

## ORGANIZING COMMITTEE

### Chief Patrons

**Dr. Elizabeth Verghese**, Chairperson, HGI

### Patrons

**Dr. Anand Jacob Verghese**, Director & CEO, HGI

**Dr. Annie Jacob**, Director

### Co Patrons

**Dr. P. Deiva Sundari**, Principal

### Coordinators

**Dr. V. Thulasi Bai**, Professor, ECE

**Dr. Kavitha Balamurugan**, Associate Professor & Head, ECE

### Organizing Secretaries

**Mr. S. Sadasivam**, Assistant Professor (SG), ECE

**Ms. K. Jaraline Kirubavathy**, Assistant Professor, ECE

### Tentative Schedule

Days	Morning Session – I 09:00AM – 11:00AM	Morning Session – II 11:15AM – 01:15AM	Afternoon Session 02:00PM – 05:00PM.
1	Inauguration	Introduction to Infectious Diseases and its Terminology	Introduction to Data Analysis
2	Introduction to Geospatial Analysis	Introduction to Geo-Informatics	Concept of Statistics in Health Data Science/Machine Learning
3	Hands on: QGIS Introduction, Image Registration, Shape File Creation, Feature Querying and Selection	Hands on: Raster & Vector Analysis in QGIS	Data Analysis Algorithms in the field of Infectious Disease
4	Geospatial Applications	COVID 19 Data Mapping and Visualization using QGIS	Health and happiness
5	Use of Machine Learning and Artificial Intelligence in Fight Against Covid-19	Introduction to latest Geospatial Tools	Feedback and Assessment