



Pune Knowledge Cluster,  
CODATA - National Committee  
& The Indian National Science Academy  
Present

A LIVE WEBINAR ON

# MACHINE LEARNING & ARTIFICIAL INTELLIGENCE FOR GEOSCIENCE APPLICATIONS



**MONDAY**

**15TH NOVEMBER 2021**

**TIME : 4:00 PM**

The growth of data science, machine learning and deep learning has opened several new research avenues in the Geosciences, which has rich spatiotemporal datasets and physics-based models. We focus on recent applications of machine learning in satellite oceanography, human-wildlife conflict, and routing of autonomous marine vehicles. Specifically, we show a novel W-Net architecture that we developed for extracting synoptic ocean features from concurrent satellite images. Second, we illustrate a random forest algorithm for studying the habitat suitability of Asian elephants in India. Finally, we show a GPU accelerated path planning algorithm for guiding autonomous underwater vehicles in a stochastic dynamic ocean.



## DR. DEEPAK SUBRAMANI

Assistant Professor,  
Dept. of Computational & Data Sciences,  
The Indian Institute of Science (IISc),  
Bangalore.

Dr. Deepak Subramani is an Assistant Professor in the Dept. of Computational and Data Sciences at the Indian Institute of Science (IISc) in Bangalore. He obtained his Ph.D. in Mechanical Engineering and Computation, MS in Computation for Design and Optimization, both from the Massachusetts Institute of Technology (MIT), USA. He has a B.Tech in Mechanical Engineering and M.Tech in Energy Technology (Dual Degree Program) from IIT Madras. He is an expert in data-driven modeling, numerical optimization, and scientific computing. His current research focus is on using ML/AI for geoscience applications, climate studies, uncertainty quantification, and optimal routing of autonomous vehicles.

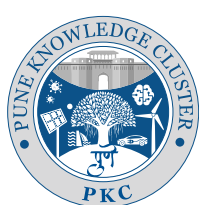
He has won several awards throughout his career, including the Arcot Ramachandran Young Investigator Award, INSPIRE Faculty award, de Florez research award at MIT, SNAME award, GE Foundation Leader Scholar Award, and National Talent Search. He has more than 25 peer-reviewed publications in top journals and international conferences.

Website: <http://cds.iisc.ac.in/faculty/deepakns/>

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The Pune Knowledge Cluster (PKC) has been established by the Office of the Principal Scientific Advisor to the Government of India. The aim is to bring together academia, R&D institutions and the industry of Pune and its surrounding regions to address the challenging problems of the region through innovative means, using scientific knowledge and engaging highly skilled human resources.

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