



Indian Institute of Space Science and Technology
Valiamala, Thiruvananthapuram - 695 547, Kerala

AVENUES of COMPUTER SCIENCE in the SPACE DOMAIN

Dr. Manikantan Ramadas
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3:00 PM



15
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D1, R107
Meeting Room

Abstract

Computer Science is a vast and dynamic field having impact on various aspects of our human enterprise. The goal of this talk is to give a breadth-wise exposure to some of the avenues of Computer Science such as Architecture, Algorithms, Programming, Networking & Communication, AI/ML, Quantum Communication, Virtualization / Cloud Computing, Data and Control Centres, Cyber Security, Software Engineering, High precision / Computationally-intensive tasks for Deep-Space Flight Navigation, etc. The trends, opportunities and work-areas for a Computer Science Engineer / Scientist in the Space Domain shall be discussed. Pointers / References for further learning shall also be provided.

Brief BIO

Manikantan Ramadas completed his Bachelors degree in Computer Science and Engineering at Coimbatore Institute of Technology, Coimbatore, Tamil Nadu in 1999. After working for a year at IBM India, he got his Masters of Science degree in Computer Science with focus on Network Security (2003) and his PhD degree (2007) in Computer Science, with focus on Deep-Space Communication Protocols, both from Ohio University, Athens, Ohio, USA. At ISTRAC since 2007, he has worked on Real-Time Spacecraft TTC Data Handling software MPS, Science mission Data Processing, Archival and Dissemination at the Indian Space Science Data Center, and handled real-time PSLV/GSLV Telemetry data from ISTRAC stations. Currently he is the Group-Head of the Flight Dynamics and Spacecraft Scheduling Group as part of Spacecraft Operations Area of ISTRAC. His research interests are in all areas of Computer Science; he finds Flight Dynamics to be fascinating and is working on understanding various concepts, algorithms, and on improving their implementations.