DEPARTMENT OF INSTRUMENTATION
Cochin University of Science and Technology

RESEARCH CONFAB

Topic   : Challenges in IoT-Mobile Robot Positioning & AI Assisted Solutions

Speaker   : Vishnukumar V (Research Scholar)

Date   : 14-09-2023

Time   : 2.30 PM

Google meet link   : https://meet.google.com/xxj-qkit-rbw

Abstract   :

IoT and mobile robotics are the most emerging areas, extensively contribute to a revolution, Industry 4.0 and Industry 5.0. Industry 4.0 focused on technologies such as the Internet of Things and big data, Industry 5.0 seeks to add human, environmental and social aspects back into the equation. Where Industry 5.0 refers to robot and smart machines working alongside people with added resilience and sustainability goals included. Advanced solutions for the challenges with IoT and Mobile Robotics using Artificial Intelligence(AI) assisted techniques is the core of this transformation. GNSS outage compensation using neural networks is an example, briefed in this presentation.

There are multiple approaches to overcome the challenges with INS/GNSS navigation systems, especially non linearity and measurement interruptions. Selection of such a method considering the scenario and platforms is the fundamental and primary task. This section presents the INS/GNSS fusion methodology, which incorporates the EKF estimation of INS drift error growth and similarly the compensational LSTM algorithm for intermittent GNSS outages during navigation and mapping. This presentation includes one case study, and the application of AI in IoT and robotics are numerous.