# Towards secure and resilient sensor orchestration for the Internet of Things

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*Abstract— In distributed systems, the notion of orchestration generally refers to the harmonious coordination of individual sensors or components to achieve a given task or workflow. Individual components may adaptive, automated, or the result of other real-time compositions to create or support new functionality.*

*The concept is related to the notion of cyber command and control (C2) which is generally associated with the exercise of authority, direction and coordination of assets and capabilities applied to a distributed sensor, communication and computational infrastructure. The orchestration of automated components in distributed complex environment normally involves important operational functions such as the establishment of intent, allocation of roles and responsibilities, definition of rules and constraints, and the monitoring and estimation of system state, situation, and progress, and is an active and important area of research*

*In this talk I will introduce some of the motivations, requirements, and challenges associated with the design of secure and resilient orchestration of different types of IoT system.*

## BIOGRAPHY

Dr. Marco M. Carvalho is a Professor at the Florida Institute of Technology, in Melbourne, FL/USA. He graduated in Mechanical Engineering at the University Brasilia (UnB Brazil), where he also completed his M.Sc. in Mechanical Engineering with specialization in dynamic systems. Dr. Carvalho also holds a M.Sc. in Computer Science from the University of West Florida and a Ph.D. in Computer Science from Tulane University, with specialization in Machine Learning and Data Mining. At Florida Tech, Dr. Carvalho is the Dean of the College of Engineering and Science, and the Executive Director of the Harris Institute for Assured Information. Dr. Carvalho is also the Principal Investigator of several research projects in the areas of cybersecurity, distributed systems, and human-systems teamwork for cyber operations and defense. Dr. Carvalho can be contacted at mcarvalho@fit.edu.