

State Awareness Session

Session Chair: Venkat Venkatasubramanian, Purdue University

Session Description

1. Technical Focus and Overview

- What do we mean by state awareness?
- What is the scope? What are the objectives?
- What are the desirable features of a state awareness system?
- How do we monitor highly non-linear, dynamic, and noisy systems and environments? What are the issues and challenges?
- How do we optimally distribute sensors in networks?
- How do we arrive at correct and consistent interpretations and decisions from conflicting, uncertain and/or incomplete, data?
- How do we manage data overload?
- What are the theoretical, analytical, and computational tools available to us to model these systems?

2. Topical Areas for Discussion in Breakout

(a) Data and information overload

- Features and knowledge extraction
- Real-time performance and computational issues

(b) What can we learn from biological systems?

- State awareness in biological systems
- Design and operating principles
- What is applicable to human engineered systems?

(c) Distributed and networked systems

- Complex adaptive networks
- Resilience

3. Introduction of Session Speakers

(a) Dr. Ragu Rengaswamy – Clarkson University

(b) Dr. Jay Lee, University of Cincinnati