

## **Workshop: AI for Smart Robots by Prof. Satyandra K. Gupta**

A one-day workshop on "AI for Smart Robots" will be organised at MMCR, CPDM, on Tuesday 13 Sept 2022 during 1000-1600.

**Workshop title:** AI for Smart Robots

**Speaker:** Prof. Satyandra K. Gupta, Smith International Professorship in Mechanical Engineering and Professor of Aerospace & Mechanical Engineering and Computer Science, University of Southern California (<https://viterbi.usc.edu/directory/faculty/Gupta/Satyandra>)

**Topics:** Basic AI components needed for realizing smart robotic assistants:

- Introduction and terminology to characterize different types of robots and relevant AI technologies
- Mathematical modeling of robots to enable physics-informed reasoning
- Task planning to generate optimal task assignments and sequences
- Motion planning to generate safe and efficient robot trajectories
- Perception to enable robots to monitor task progress and take corrective actions
- Implementation case studies in the field of manufacturing process automation and material handling

**Intended audience:**

- This workshop is intended for PhD and Master's students who intend to play strategic roles in the selection and deployment of advanced robotics and automation technologies.

**Learning objectives:**

- Become familiar with recent advances in robotics & AI.
- Select industrial robots and sensors for a given application.
- Select AI component technologies for implementing smart robotics assistants for manufacturing and material handling applications.

Interested students need to register for this event via the following link:

<https://docs.google.com/forms/d/e/1FAIpQLSfzFBx3rqPmp8yBn7vwNe9bX8VNdDCWtX9Y757zcNuTdPPWQ/viewform>