2021 NSF CYBER-PHYSICAL SYSTEMS PRINCIPAL INVESTIGATORS' MEETING

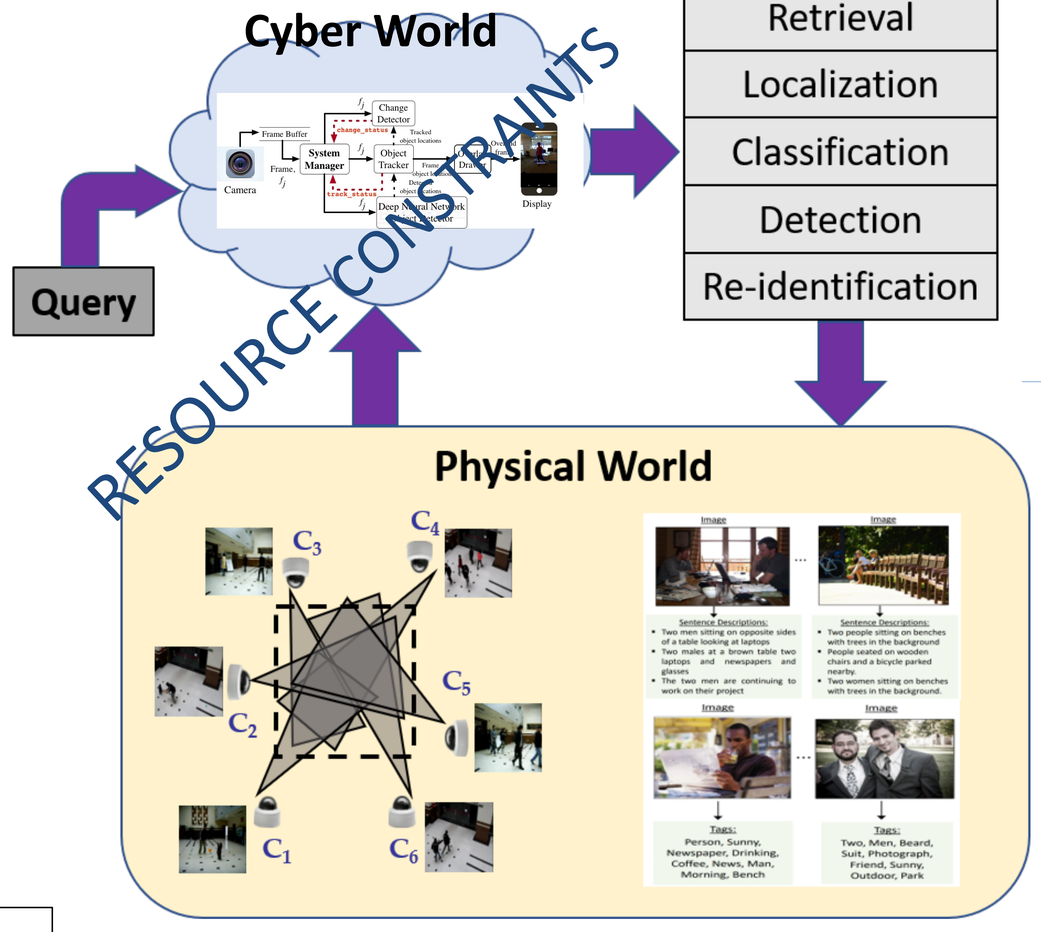
CPS: Synergy: Collaborative Research: Extracting time-critical situational awareness from resource constrained networks

Amit Roy-Chowdhury (PI), S. Krishnamurthy, E. Keogh (UCR), Sharad Mehrotra (UCI))

Challenge: Facilitate timely retrieval of situational awareness information from rich content generated by field deployed nodes in resource-constrained, uncertain environments.

Solution:

- Dynamic Data Acquisition and Analysis
- Information Fusion under Resource Constraints
- Scalable Multimodal, Multi-Sensor Data Processing



Scientific Impact:

- Integrated approaches to data collection and analysis.
- Weakly supervised machine learning for multimodal, multi-sensor data analysis.
- Power thrifty approaches for deep networks on mobile devices for data analysis and query retrieval.

Broader Impact:

- Situational awareness in resource-constrained environments like disaster response.
- Impact on data analysis for disaster response, law enforcement, power-constrained mobile devices, etc.
- Supported 6+ PhD students at UCR; graduates work in robotics and AI research at private companies.

Award # 1544969;
PI: Amit Roy-Chowdhury (University of California, Riverside), https://vcg.ece.ucr.edu/amit