

TOP: Security and Privacy of Cyber Physical Systems

From smart homes to consumer wearables, cyber-physical systems have become a commonplace in our daily lives. The heterogeneous connectivity amongst these devices has led to an increase in vulnerabilities while introducing new attack vectors. In this course, we will study the fundamental concepts, technologies used, and the current issues related to the security and privacy of cyber physical systems--primarily focusing on the Internet of Things (IoT). This course places an emphasis on hands-on projects with assigned readings and presentations. At the end of the course, students are expected to have completed a research project which outlines an IoT related vulnerability and a proposed solution.

Course Objectives:

By the end of the semester, students should have attained the following concepts:

1. An understanding of emerging IoT technologies
2. A case study on the implication of security and privacy issues in IoT
3. An understanding of select vulnerabilities and cutting edge research techniques used in IoT security.
4. Hands-on experience with developing IoT application(s)
5. A research paper highlighting a security issue and a proposed solution.