

Advanced Computer Systems Research

Course Number: CSCI 7000

Credit Hours: 3.0

Term: Spring 2024

Time and Location: Tuesdays and Thursdays: 11 AM – 12:15 PM in DLC 1B20

Instructor: Shivakant Mishra, Professor, Computer Science, CU-Boulder

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Modern computer systems support a broad range of applications and technologies that seamlessly integrate with human users. The challenge ahead is to envision new technologies, as well as to combine existing technologies, software, and sensing systems into the computer systems of the future that will span wearable computing, the Internet of Things (IoT), smart environments, smart automotive systems, and beyond.

This course will focus on the current scientific and engineering research leading to the development of the next generation of highly performant, heterogeneous, power-efficient, environmentally sustainable, and secure computer systems. Topics include embedded and multicore systems and accelerators, mobile and extensible distributed systems, IoT and edge computing systems, cloud and data-intensive processing systems, and memory, storage, and file systems. The course will comprise of reading latest research papers and doing a substantial research project that has the potential to be published in a high-quality professional conference.