



CPR E 489: Computer Networking and Data Communications

Fall 2019

Overview

Computer networks are foundations of our modern society. They are not only key enablers for the Internet services we take for granted today (e.g., web search and social networking), but also integral elements of future intelligent systems, infrastructures, and services (e.g., connected and automated vehicles, unmanned aerial vehicles, autonomous agriculture machines, smart power grid, AR/VR-based remote education, and telemedicine). There exist ample opportunities for innovations in computer networking and for students and engineers to help shape the future of a seamlessly-networked society!

This course is designed to help students appreciate the underlying principles of computer networks, to help students build the foundation for understanding advanced topics in networked systems (such as those covered in CPR E 537, CPR E 543, and CPR E 548), and to help students build up their skill set necessary for making innovative contributions to both networking technologies and applications. More specifically, the course will cover **topics** such as network architecture, multiple access control, wireless networking, packet switching, routing, software-defined networking, flow control, congestion control, quality-of-service, Internet protocols (e.g., IP, TCP, and BGP), network management, and elements of distributed computing (e.g., naming, caching, and synchronization). We will examine these topics from the perspectives of both the traditional Internet and emerging network systems such as Internet of Things (IoT) and 5G.

Prerequisites

CPR E 381, EE 324, or equivalent / consent of instructor.

Class timings: Tue Thu 11:00pm - 12:20pm

Section: 2771010 / 2771015

Credits: 4

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