Given by:
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Background Requirement(s):
General background on computer networking. There is a review in the beginning of the course.

Catalog Description:
The layered architecture, Local Area Networks, data link protocols, error correction with FEC and ARQ, routing, flow control, transport protocols, application layer protocols, recent subjects in networking.

Course Overview:
This course is designed to provide the students with a research oriented point of view on recent topics in computer networking. To this end, the first part of the course consists of a reminding overview of the layered architecture of the contemporary computer networks in top-down order. The second part of the course covers introduction and motivation of the recent problems in computer networking by the instructor. Finally each student is expected to select a topic and present a seminal research paper selected from the academic literature in class followed by a project work on the subject. The emphasized theme throughout the course is performance, quality of service and scalability of the discussed new approaches in computer networking.

Textbooks and Reference Material:
- Selected journal and conference papers

Tentative Grading:
Midterms: 50%
Final: 30%
Class Project: 20%
Paper Review: 5% (bonus)

Tentative OUTLINE

- Introduction
- Layered Architecture of Computer Networks
  - Application Layer
  - Transport Layer
  - Network Layer
  - Data link Layer
- Contemporary Topics (tentative, order can change)
  - Network architectures for Multimedia Delivery
  - Software Defined Networks (SDN)
  - Cloud Computing
  - Data Center Networking
  - Virtualization
  - Hardware architectures for IP core and Data Centers
  - Content distribution networks (CDN)
  - Internet of Things (IoT)