COM 5342 行動電信網路

Mobile Telecommunications Networks

Instructor: Prof. Shun-Ren Yang

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Textbook

➢ *Evolved Packet System (EPS) - The LTE and SAE Evolution of 3G UMTS*, Pierre Lescuyer and Thierry Lucidarme, John Wiley & Sons, Ltd.

➢ *5G Core Networks: Powering Digitalization*, Stefan Rommer, Peter Hedman, Magnus Olsson, Lars Frid, Shabnam Sultana, and Catherine Mulligan, Academic Press.

References (1/3)

➢Web Site: http://www.3gpp.org

➢Magazines:

– ACM Mobile Computing and Communications Review

– IEEE Wireless Communications Magazine

– IEEE Communications Magazine

– IEEE Network

References (2/3)

➢ Journals:
- IEEE Transactions on Vehicular Technology
- IEEE Journal on Selected Areas in Communications
- IEEE Transactions on Mobile Computing
- IEEE Transactions on Computer
- IEEE Communications Letter
- IEEE Transactions on Wireless Communications

References (3/3)

- ➢ Journals:
  - Journal of Wireless Communications and Mobile Computing
  - ACM/Springer Mobile Networks and Applications
  - ACM/Springer Wireless Networks
- ➢ Conferences:
  - INFOCOM, MobiCom, MobiHoc, etc.

Goal

➢ Learn the concept of mobile telecommunications networks.

➢ Familiar with ns-3, a discrete-event network simulator for Internet systems, and some of its use cases in mobile telecommunications networks.

➢ Study the concept of IoT management platforms using IoTtalk as an example, and design an IoT application based on the IoTtalk platform.

Course Outline

➢ 4G EVOLVED PACKET SYSTEM (EPS)
- – Evolved UMTS Overview
- – Evolved UMTS Architecture
- – Life in EPS Networks

➢ 5G
- – Architecture overview
- – Session management
- – Mobility Management
- – Etc.

➢ An IoT Platform

Office Hours & Teaching Assistants

➢ Office Hours: TBD

➢ TAs: TBD

Evaluation

➢ Midterm I (20%)

➢ Midterm II (20%)

➢ Final (20%)

➢ Programming Projects (40%) (4 subprojects)

　➢ 5%, 9%, 13%, 13%

Prerequisites

➢ Undergraduate "Introduction to Computer Networks"

➢ Basic Language Skills
  – C/C++
  – Python