

**Computing Network Programming**

# **A Brief Introduction**

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# Course Information

## ❑ Class Hours: 32

- ❖ Theory(16) + Experimental(16)

## ❑ Textbooks Recommended

- ❖ Richard Stevens, Bill Fenner, and Andrew M. Rudoff, "UNIX Network Programming, Vol. 1: The Sockets Networking API", Addison-Wesley, 3th edition.
- ❖ Bruce Molay, "Understanding Unix/Linux Programming: A Guide to Theory and Practice", Prentice Hall. Douglas Comer and David Stevens
- ❖ "Internetworking with TCP/IP Volume III: Client-Server Programming and Applications, Linux/POSIX version", Prentice Hall.

## ❑ Grading Policy

- ❖ Experiments(40%) + Final Exam(60%)

# Course Information

## □ **Instructor: Xiang Zhang**

- ❖ Senior Engineer
- ❖ Director of OSTEC@ISE
- ❖ Experimental Key Teacher of UESTC
- ❖ Visiting Scholar of BBCR in University of Waterloo (2013-2014)
- ❖ **Research Interests:**
  - SAD, Software Architecture Design
  - SDN, Software Defined Network
  - TOA, Things Oriented Architecture
  - ML&DA , Machine Learning & Data Analysis

# Objective

- ① To develop an understanding of fundamentals of computer network and network programming.
- ② To develop an understanding of the various aspects of the classical Client-Server(C/S) application.
- ③ To implement networked systems and gain experience with network programming.

# Syllabus

- ① Network Fundamentals
- ② Network Programming Fundamentals
- ③ Socket Programming - First Stage
- ④ Key Problems of Client & Server Design
- ⑤ Concurrent Server
- ⑥ I/O multiplexing
- ⑦ Advanced Network Programming Topics
- ⑧ State-of-the-art in Network Programming

# Rules

- ❑ No need to take notes.
- ❑ Try to understand what is taught in class and don't forget to do practice after class.
- ❑ Please turn off your handsets in class.
- ❑ Please do not answer the call in class. If it is really important, please go outside before answering it.