Peer-to-Peer Computing

Professor: Lu Zhengding
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To learn the **state of the art** technology.

To understand the trends and challenges ahead.

To learn how to identify significant problems.

To learn methodologies of **doing research**.

To learn how to effectively deliver ideas/results.

To learn how to raise questions for discussions.

To learn how to **make a research proposal**.
- Lectures with interactive discussions.
- Group discussions and presentations.
- Learning experiences will be evaluated by writing term papers and proposals.

*Learning for the purpose of contributing.*
No textbook for this course, but some recommended readings.

- Referred book:
• Professor: Zhengding Lu
• Instructors:
  – Ruixuan Li
  – Yuhua Li
  – Wei Song
  – Maoyuan Zhang
  – Xiaofei Liao
  – Feng Ke
  – Zhigang Wang
  – Guangcan Yu
The course covers general introduction to peer-to-peer computing, including models, techniques, algorithms, and security aspects for peer-to-peer architectures.

Several case studies of peer-to-peer architectures will be presented.

The course offers the opportunity to participate in active discussions about peer-to-peer technology.

The course also offers the opportunity to participate in an optional project work.
0. Course Overview
1. Introduction to P2P Computing
2. P2P Routing and Search Algorithms
3. Case Study - Gnutella
4. P2P-based File Sharing
5. Web Services Oriented P2P System
6. P2P-based Data Management
7. Steaming Media Delivery over P2P Network (Invited Talk)
8. P2P Security Issues
9. Semantic P2P Network
10. P2P Applications
Lectures and interactive discussions

A mini research seminar
- organizing 5-10 talks of current research
- Each 10~15 minutes: (1) motivation, (2) problems, (3) limits of existing solutions, (4) your solutions, (5) methodology and expected results.
  - Submit your title to the teacher before the class.
  - We will question, comment, and discuss each project.

Final score
- Question and discussions (30%)
- Research seminar and presentation (30%)
- Term paper (40%)