COM S 661 Advanced Topics in Database Systems

Fall 2004
URL: www.cs.iastate.edu/~cs661

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Welcome
Staff

- Instructor
  - Dr. Wallapak Tavanapong (call me “Pak”)
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  - Office Hours:
    - M: 9-10:00 am and F 10:00-11:30 am or by appointment

- Teaching Assistant
  - None

Pre-requisites

- COM S 561 or COM S 461
- Permission of the instructor
Objectives

- Investigate more on different types of database management systems
  - Parallel and Distributed DBMS
  - Multimedia DBMS
- Learn and practice research process
  - Read recent papers regularly
  - Be able to identify originality, technicality, and drawback of the works read
  - Be able to come up with new ideas
  - Listen and respects comments from others and rethink the ideas

Performance Assessment

- Participation: 5%
- Midterm: 15%
- Final: 25%
- Individual Assignments: 25% (7, 8, 10)
- Team Project: 30%
  - Report: 10%
  - Software: 10%
  - Presentation: 10%
Assignments

- Read/Critique three assigned papers
  - Originality
  - Technicality
  - Drawbacks of techniques proposed by the authors
  - What would you do differently to solve the problem?

Projects

- 2-3 person projects
- Read three articles in the same sub-area in recent journals or conferences in the area of your interests
- Evaluate performance for one of the techniques
- Write a report
  - Like a conference paper
  - Introduction/Existing Works/Performance Evaluation/Conclusion/Reference
  - Extra credits: Proposed work and performance assessment (equivalent to 10% final)
- Presentation of your findings
Good Team Members

- Be an active and constructive member
- Perform assigned duties in a timely manner
- Respect and listen to opinions of other teammates
- Question teammates politely to expose possible drawbacks of the proposed idea
- Politely persuade other team members to rethink their idea
- Rethink your own idea based on comments from teammates
- Help other teammates when needed, but don’t over helping
- Communicate openly and regularly with other members
- Attend team meeting regularly, be on time, and contribute your efforts

Lectures

- Random sampling to compute participation scores
- Lecture notes available for downloading, but not everything discussed in class will be included in the provided lecture notes
Lecture Content

- Parallel & Distributed Databases
  - Distributed DBMS Architecture (Chapter 4)
  - Distributed Database Design (Chapter 5)
  - Overview of Query Processing (Chapter 7)
  - Query Decomposition and Data Localization (Chapter 8)
  - Parallel Databases or Transaction Management

- Multimedia Databases

On-going DB Research Projects in Com S

- Dr. Gadia
  - Parametric Database for Spatiotemporal Data
  - Meteorology data set deals with weather and related atmospheric phenomena

- Dr. Miller
  - Infrastructure Models for Supporting Large Field Data Collection
  - Searching Heterogeneous Data Sources

- Pak and Dr. Wong
  - Intelligent Multimedia Processing and Analysis for Colorectal Tumors (IMPACT)
Spatiotemporal Objects

- Objects with spatial characteristics like shapes and sizes; the position of objects change over time

- Example:
  - Moving person in surveillance video
  - Moving hurricanes (coverage, size)