CS614: Advanced Course in Computer Systems (Fall ’06)

Instructor: Ken Birman
TA: Mahesh Balakrishnan

Topics

• Operating Systems
  – Concurrency, file systems, VM, I/O, etc.
• Distribution/Networking
  – RPC, clusters, pub/sub, mobility, etc.
• Fault Tolerance
  – Replication, consensus, transactions, etc.

Reading

• Each lecture has two conflicting papers.
  – Different approach, competition, criticism, …
• 27 lectures, 54 (required) papers!
• From the best journals and conferences.
  – TOCS, SOSP, OSDI, …

Summaries

• Each student is required to prepare notes on each paper before class and to bring them to class for use in discussion.
• Your notes should list assumptions, innovative contributions and criticisms. Every paper in the reading list has at least one major weakness.

Lecturing

• Each student is strongly encouraged to present one or two lectures
  – Requires some extra background reading
  – Use PowerPoint
  – Please don’t use last year’s slides
• Run slides by me or the TA before lecture
• We’ll put the slides on-line

Class Format

• 45 minutes presentation, 30 minutes discussion/brainstorming.
  – In that order, or mixed.
• All students are required to participate!
• Counts in final grading.
Project

- One major project per person
  - Or two persons for a very major project
- Choose area within one week and tell me.
- Do survey (2-3 pages) by Sept. 28
  - Counts towards your grade
- Discuss topic with me too

Peer Review

- A few weeks before the end of the semester, you’ll produce a draft of your paper.
- Each draft will be “reviewed” by 3 co-students
- Reviews go back to you
- Revised final submission + rebuttal due last day of classes
- Grading:
  - Project: 50%
  - Participation in all of this: 50%

Project Suggestions

- Service discovery in dynamic networks
  - I have ideas, but you could also talk to Gun Sirer or Johannes Gehrke for more ideas
- Technology ideas to enhance protection of private data and activities
- Scalable trust
- Issues in integrating medical telemetry into electronic medical health records
- ….

Office Hours

- Ken will normally be around from 10am to 2:30 or 3:00pm
  - But he attends meetings and goes to lunch with the department, so noon-1:15 is usually bad
  - Can make appointments by email if you prefer

Important Deadlines

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<thead>
<tr>
<th>Date</th>
<th>Task</th>
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<tbody>
<tr>
<td>9/14</td>
<td>E-mail me your topic of interest</td>
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<tr>
<td>9/28</td>
<td>Submit 2-3 pages survey on topic</td>
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<tr>
<td>10/5</td>
<td>Discuss project topic with me</td>
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<tr>
<td>11/9</td>
<td>Draft version of paper due</td>
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<tr>
<td>11/16</td>
<td>Peer reviews due</td>
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<tr>
<td>12/5</td>
<td>Final paper + rebuttal due</td>
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