CSE 486/586: Distributed Systems
Course Conclusion

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In this course, we discussed the design and implementation of large-scale distributed systems.

You gathered some experience implementing distributed systems.

...and sometimes finding out it’s not as easy as it looks!

We covered some fundamentals, and some applications.
Before the Midterm

- Internet architecture
- Android architecture
- Failure detectors
- Time (logical and physical clocks)
- Global states
- Reliable multicast
- Gossiping
- Peer-to-peer architectures
- Distributed hash tables
After the Midterm

- Software development
- Consensus
- Mutual exclusion
- Elections
- Paxos
- Concurrency
- Consistency
- Amazon Dynamo
- The domain name system
- Content distribution networks
- Facebook Haystack and f4
- Distributed Filesystems
- Remote procedure calls
- Security
What should you take away from this course?

A few concepts came up over and over.

- Find a solution that fits the problem
- Many problems are not decisively solvable or are provably unsolvable in asynchronous systems
- Scalability requires attention to performance
- Correctness depends on your application
- Good distributed systems are planned
The Application is Everything

More than anything else:

Solutions in distributed systems must fit the problem. There are too many performance traps and proven limitations for one-size-fits-all solutions.
Where should you go from here?

Here at UB:

- Topics that support distributed systems:
  - CSE 421/521: Introduction to Operating Systems
  - CSE 470/570: Introduction to Parallel and Distributed Processing
  - CSE 489/589: Modern Network Concepts

- Topics that use distributed systems:
  - CSE 622: Advanced Computer Systems
Where should you go from here?

Research venues:

- OSDI
- ICDCS
- IPDPS
- NSDI
- Journal of Parallel and Distributed Computing
- IEEE Transactions on Parallel and Distributed Systems
- Concurrency and Computation: Practice and Experience
Final Exam

The final is *Wednesday, May 16* from 15:30-18:30.

It will be in *Millard Fillmore Academic Center* room 170.

Please **arrive on time**.

The exam is **closed book, closed notes**.

**Do not bring:**

- Cell phones
- Laptops
- Wearables
Review Session

There will be a review session tonight.

Talbert 107, 18:00-20:00

I will take any questions about any course material.

I will take any questions about the exam, but may decline to answer!
Thank you for a great semester.
I have enjoyed it, and I hope you have, too.
Stay in touch, you know where to find me!