

COSC 462

Parallel Programming

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and
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TA: Mike Tsai

Class Web Page

- http://bit.ly/cosc462_2016

Instructors

- George
 - Claxton 308
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- Piotr
 - Claxton 316
 - Hours: 8-5pm
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Grading

- Exam 1 = 20%
- Exam 2 = 20%
- Exam 3 = 30% (cumulative)
- Homework = 20%
- Project = 10%
- Grading on the curve

Homeworks

- Programming projects
 - Based on lectures
- Grading
 - Correctness
 - “Smoke test”
 - Correct result
 - Stress test
 - Parallelism and/or concurrency issues
 - Performance
 - Nice but optional
 - Unless specifically requested

Schedule

- POSIX threads
- MPI
- Algorithms
- OpenMP
- OpenSHMEM
- NVIDIA CUDA
- MPI+X
- Cilk
- Intel TBB/CnC

Textbook

- Parallel Programming in C with MPI and OpenMP by Michael J. Quinn
 - Out of print
 - Does not cover all the topics
- Additional books will be announced
 - Good books available in the UT library in electronic form

Projects

- Topics (not covered in class):
 - FPGAs, NVIDIA Pascal, new CPU processors, ASICs, network equipment
 - Programming Languages (focus on parallelism and/or concurrency)
 - Execution models and their implementations (HPX, SWARM)
- Each project done by a group (2-3 students)
- Delivery
 - Private video link (YouTube, Vimeo, ...)
 - 5 minutes maximum
 - Will be made available to all class participants
- Content
 - Slides
 - Animation
 - Narration
 - Links for more info

Content

- Parallelism
- Concurrency
- Software approaches
 - Languages
 - Paradigms
- Some information about hardware
 - Processors
 - Caches
 - Memory
 - Protocols