ST: CDA 6938: Multi-core/Many-core Architectures and Programming
Syllabus
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Description
The course teaches both the architecture of modern multi-core/many-core processors and the parallel programming principles to exploit the computational power of multi-core/many-core processors.

Lectures: Tu Th 3:00pm ~ 4:15pm HEC 302
Office hours: Tu Th 4:15pm ~ 5:30pm, HEC 243

Course website: http://csl.cs.ucf.edu/courses/CDA6938/ (check it often for updates)

Reading/Supplementary Material (all optional textbooks)

- Patterns for Parallel Programming by T. G. Mattson, B. A. Sanders, and B. L. Massingill, Addison-Wesley, ISBN 0-321-22811-1
- Research papers and lecture notes

Course Outline

Introduction to multi-core/many-core architecture
Introduction to multi-core/many-core programming
AMD/ATI GPU architectures and the programming model for GPGPU (Brook+ and CAL)
NVidia GPU architectures and the programming model for GPGPU (CUDA)
IBM Cell BE architecture and the programming model for GPGPU
Data-level parallelism and the associated programming patterns
Thread-level parallelism and the associated programming patterns
Future multi-core/many-core architectures
Future programming support for multi-core/many-core processors

Grading: +/- grading system will be used.

Homework assignments: 25%
Participation in discussion: 10%
Projects: 65% (including two in-class presentations for project proposal and project results)

A:90~100  B+: 85~90  B: 80~85  B-: 75~80  C+:70~75  C: 65~70  C-:60~65  F:0~59