



Introduction to Parallel & Distributed Computing

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Grading & Textbooks

◆ Grading (tentative)

- **Homework: 30%**
- **Mini-project: 20%**
- **Final exam: 50%**

◆ References

- **Berkeley ParLab BootCamp 2013**
 - <http://parlab.eecs.berkeley.edu/2012bootcampagenda>
- **Stanford CS149**
 - <http://cs149.stanford.edu/fall20>
- **Encyclopedia of Parallel Computing**
 - <https://link.springer.com/referencework/10.1007/978-0-387-09766-4>

Course Overview

◆ Questions to address

- What is parallel and distributed computing?
- How to do parallel & distributed programming, and *do it well*?

◆ Emphasis of this course

- Basic concepts
- Programming tools
- Parallel algorithms
 - ◆ (“distributed” as in distributed-memory parallel system)
 - ◆ (NOT the general distributed system)

This Course Covers...

◆ **Basic concepts**

- **Hardware/software infrastructures**
- **Design patterns**
- **Performance models**

◆ **Programming tools**

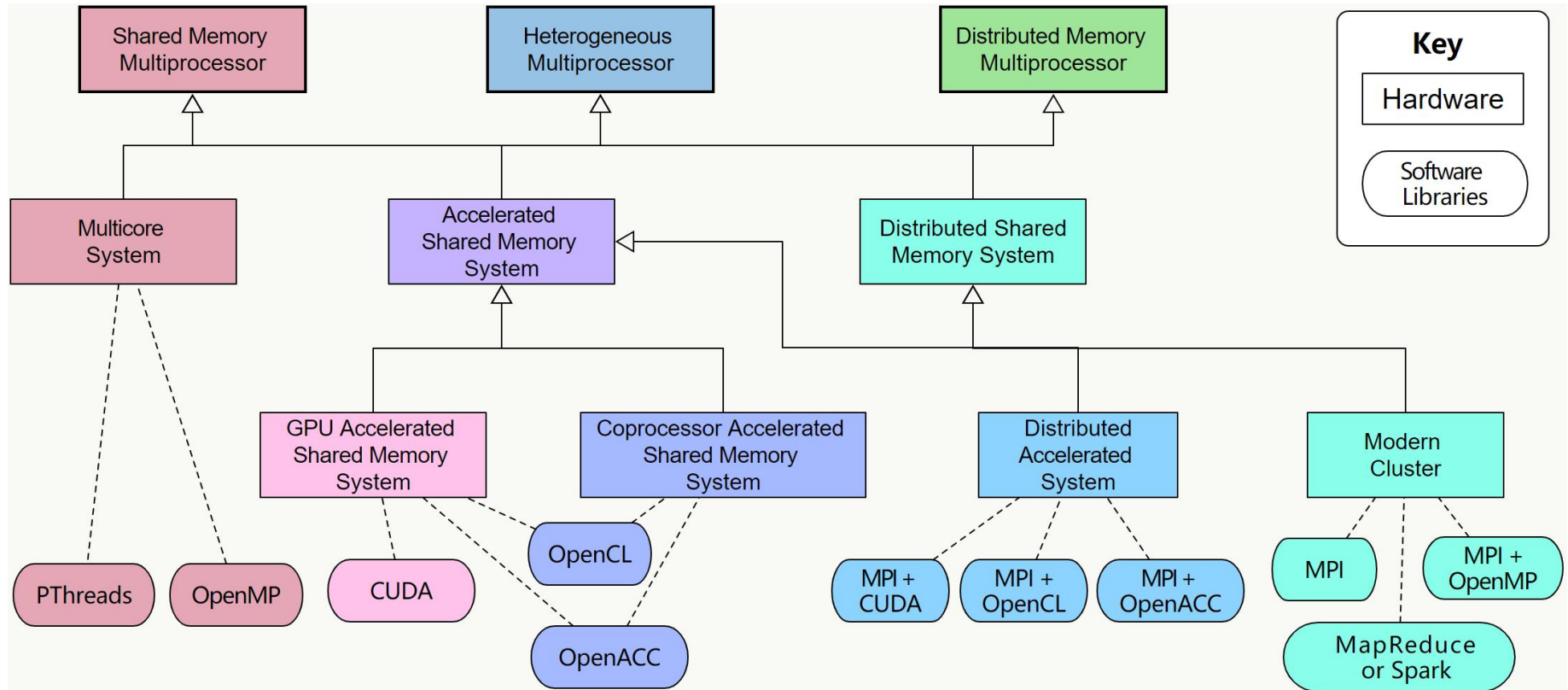
- **OpenMP; MPI; CUDA/HIP; sth. for NPU**

◆ **Algorithms**

- **Matrix computation**
- **Continuous optimization**
- **Graph algorithms**
- **Discrete search**

◆ **Emerging topics**

Related Hardware and Software



Class Schedules

◆ Class meetings

- **Wed. 8am-10am (weekly), 三教101**
- **Fri. 10am-12pm (bi-weekly), 三教101**

◆ Office hours, by appointment

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