

Final Project Guidelines

15-418/618 Spring 2018

Overall Requirements

- **Explore some aspect of parallel programming and computer architecture**
 - Wide range of possibilities
 - Something of interest to you—creativity encouraged
- **Significant effort: 25% of course grade**
 - Assignment 2, Assignment 3 each worth 12% of grade

Schedule: Now to Poster Session

Su	M	T	W	Th	F	Sa
			28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5
6	7	8				



**Something
Due**

General Project Types

■ Application

- Take some application and speed it up through parallelism
- Many interesting possibilities, but our focus is on parallel computing

■ System Capabilities

- Implement or evaluate useful system capabilities
- E.g., synchronization, language extensions, encryption

■ Explore Platforms

- Understand other GPUs, evaluate other machines, compare programming languages

Resources

■ Familiar hardware

- Multicore servers
- NVIDIA GPUs

■ Available hardware

- Your phone / tablet
- Xeon Phi's (part of Latedays cluster)
- Amazon Web Services
- Others you can find

■ Software

- C, C++, Go
- CUDA
- Available frameworks

Important Dates

■ Proposal

- 4/4: Checkpoint
- 4/9: Proposal

■ Project

- 4/18: Checkpoint I
- 4/27: Checkpoint II
- 5/7: Report
- 5/8: Poster Session
 - During the scheduled final exam slot for course

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Of Interest to Us

■ Further the cause of GraphRats

- Novel Platforms
 - Map onto GPU
 - Map onto Xeon Phi
 - Implement in ISPC
- Coupled with Variations
 - Adjust graph structures and initial distributions
 - Different random number generator
 - Different reward function