CS**5643**

10 Final project process

Steve Marschner
Cornell University
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Goals of final project

Assignments exposed you to:

- some simulation domains (fluids, cloth, deformable solids, rigid bodies)

- some techniques (procedural flows, masses and springs, elastic potentials, collision resolution)

- …but mainly in 2D and in pretty isolated settings

Final project lets you explore an aspect of your choosing

- go more in depth on one of the applications (higher quality, better robustness, …)

- promote one of your simulations from 2D to 3D

- explore a new method (position based physics, material point method, implicit integration, …)

- explore a new problem (rod simulation, fluid mechanics, flocking, …)

You are helping define what a CS5643 project looks like!

Criteria for project scope

Project should be about as much work as one CS5643 PA

- focus on doing one simple thing well

- structure complex ambitions into core requirements + stretch goals

Work in groups of 2 to 4

- we expect somewhat more scope from larger groups but sublinear

- try to ensure projects have N components that can be implemented and tested with some degree of independence

Include plans for evaluation

- how will you know whether your simulator works?

- propose some test cases where you can say what you expect to happen

Some possible ideas

Cloth with collisions

- add collision detection and response to your PA1 cloth simulator

- with a larger group, implement a better cloth deformation model too

Rigid bodies in 3D

- generalize PA3 simulator from 2D to 3D

Deformable solids in 3D

- generalize PA2 simulator from 2D to 3D

Fluid simulation

- Particle Based Fluids or Stable Fluids

- with a larger group include a simple volume rendering component for nice looking results

But there are lots more possibilities!

Timeline

Proposals due 18 April

Proposal revisions due 25 April

Milestone presentations 9 May

Final presentations 18 May