# CS**5643**
**11** Final project process

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# Goals of final project

**Assignments exposed you to:**

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

- some techniques (particles, elastic potentials, collision resolution, grid solvers)

- …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 PA2 simulator from 2D to 3D

**Deformable solids**

· generalize PA1 elastic simulator from 2D to 3D

· or add collision detection and response
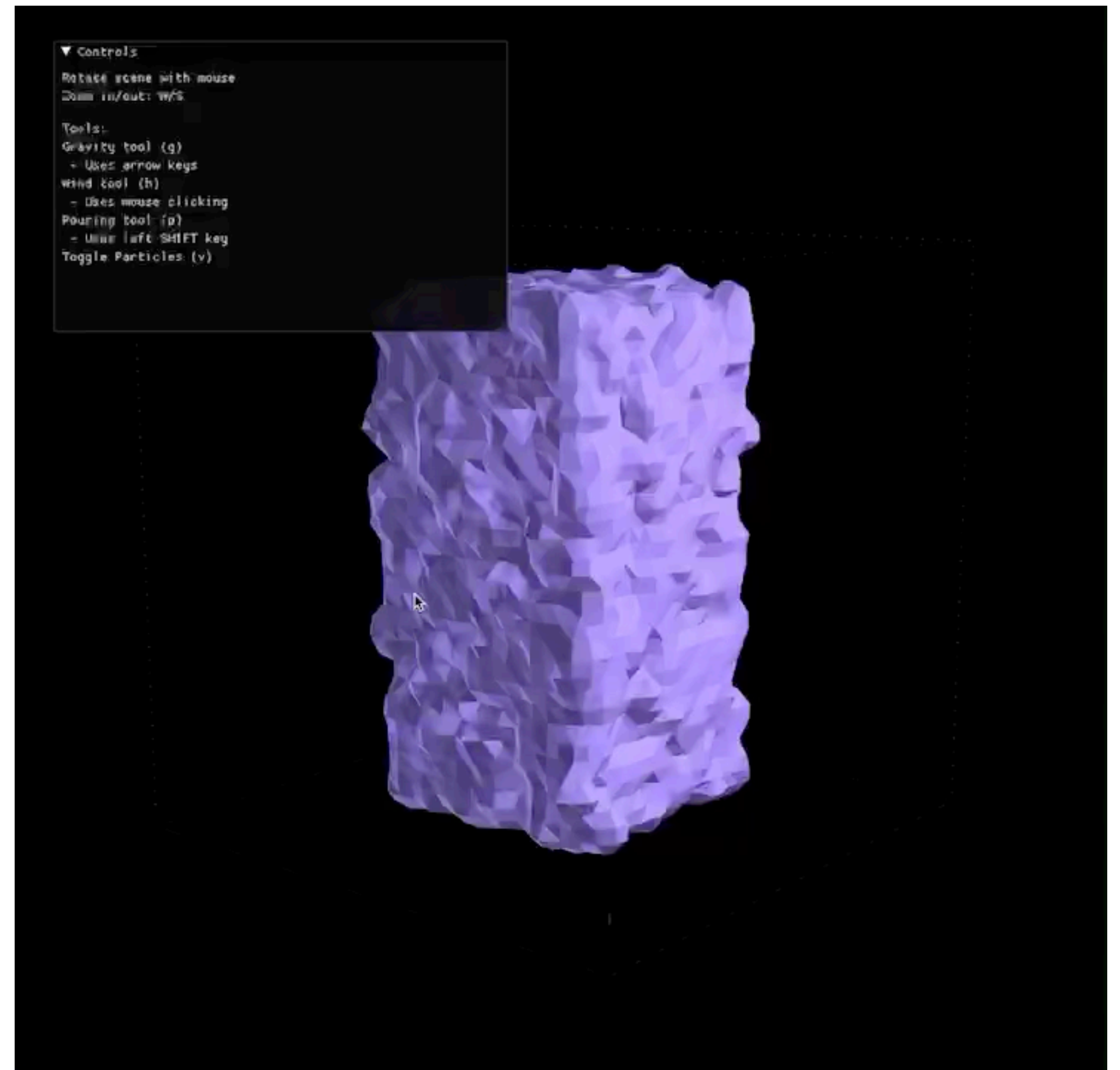
**Fluid simulation**

· generalize PA3 simulator to 3D

· with a larger group, extract and render a decent surface too

**But there are lots more possibilities!**

# Some cool examples from last year



Eric Chen



Aidan Campbell, Jonna Chen, Noah Pikielny, Judy Ng

# Timeline

**Proposals due 28 March**

**Proposal revisions due 10 April**

**Milestone presentations 6 May**

**Final presentations 17 May**