Algorithmic Animation and Modelling: Part 1 of 2
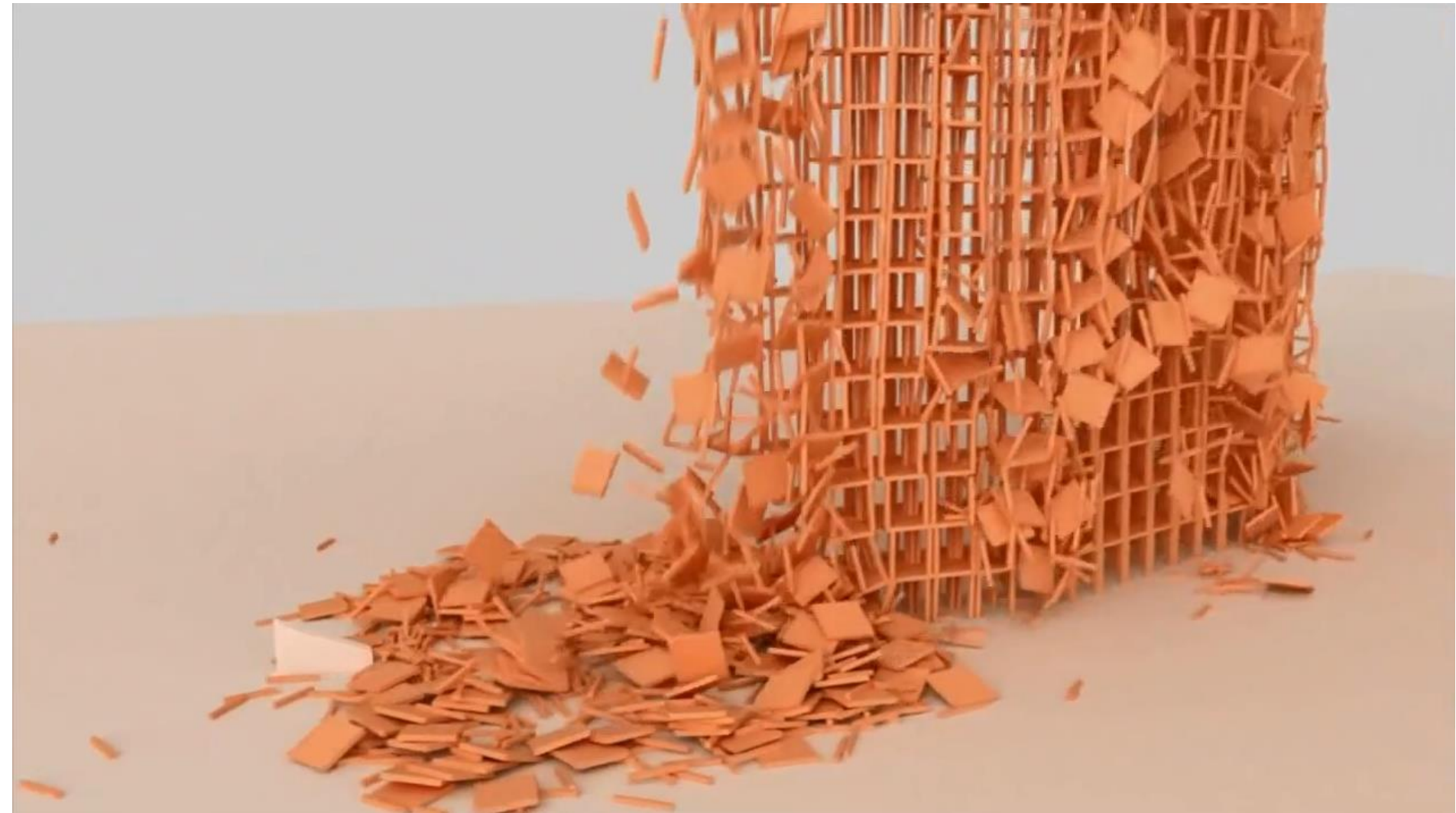
Bullet Physics, Fluid, Fire, Smoke, and Particle Simulations

Blender: Bullet Physics simulation
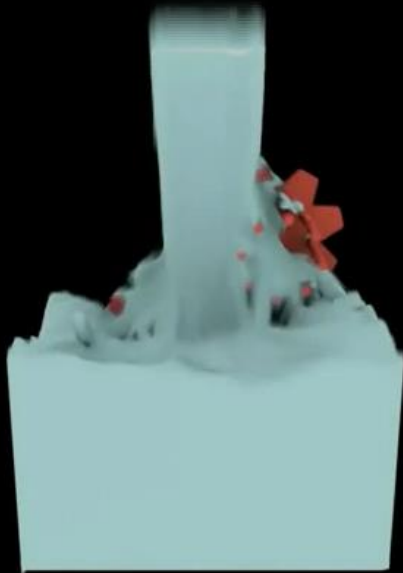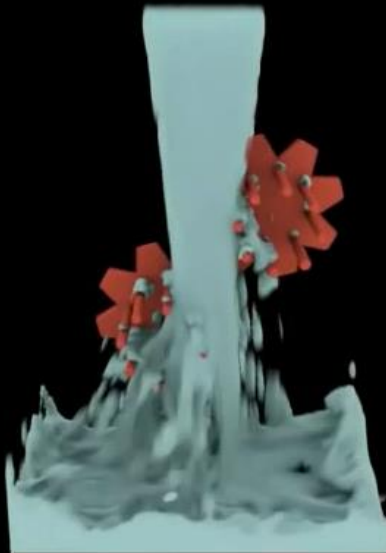
Eye candy
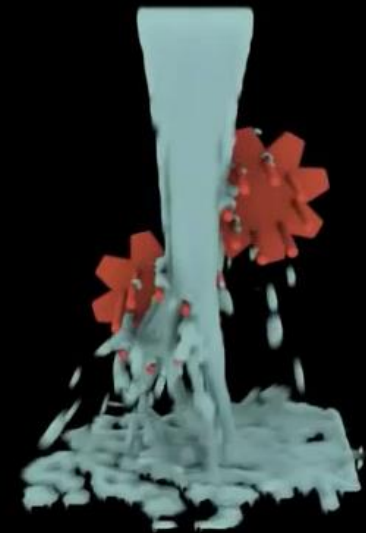

by AREANDRES '13

Blender: Fluid simulation

Blender: Water simulation

Blender: Fire simulation

Blender: Another Fire simulation

Blender: Last Fire simulation
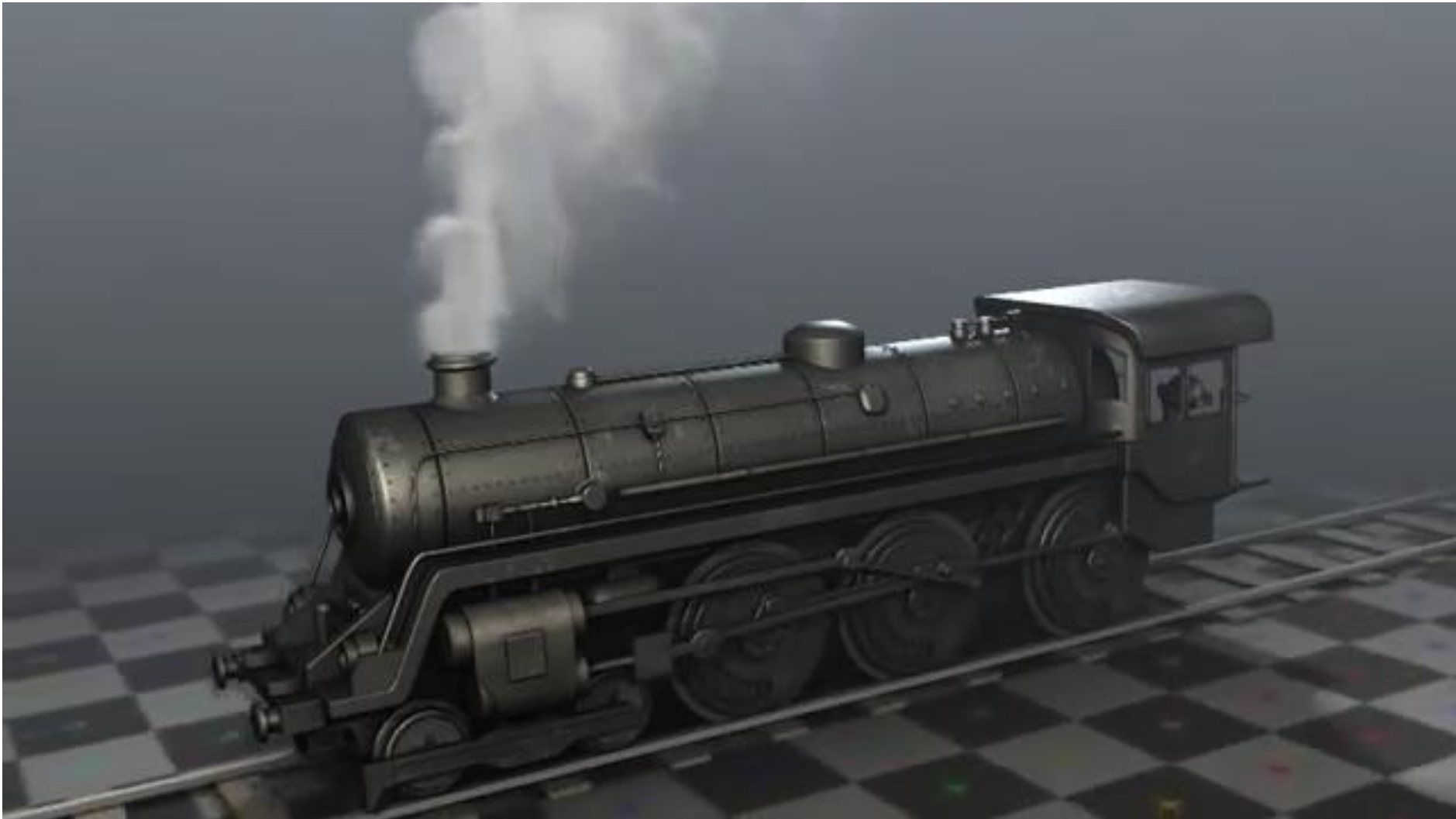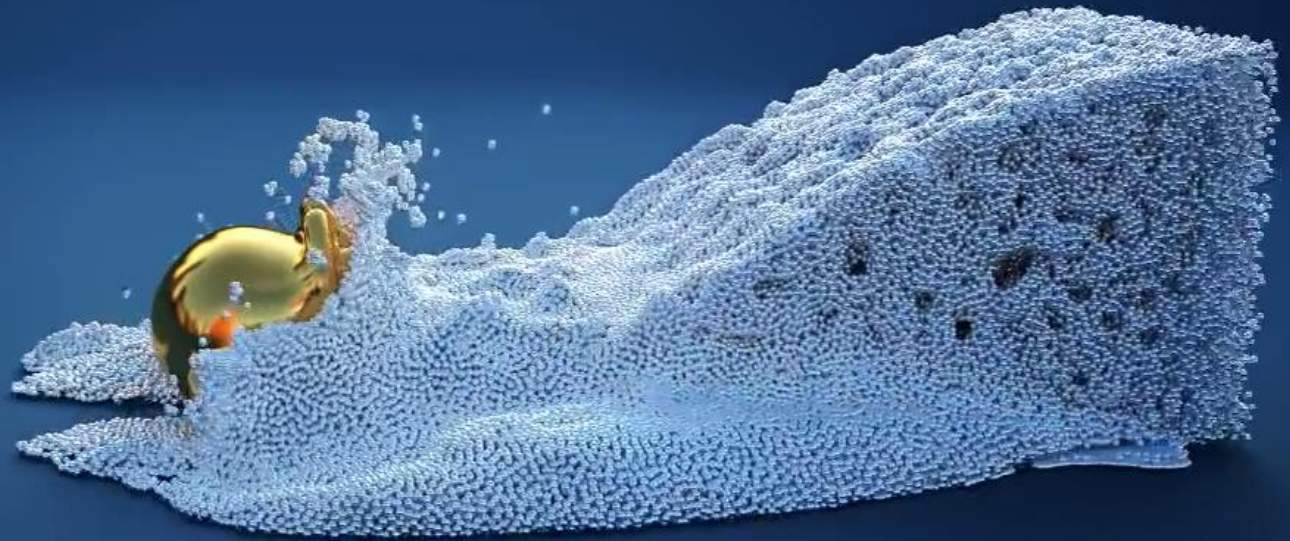
Blender: Smoke simulation

Smoke with a wind force

500,000 particles with collision

Rob and Jay's Render: Particles

- Particles:
  - 100 million, 3 vertex triangles
- Animation:
  - 42 second length
  - Simple double vortex field with negative gravity.
- Render machine:
  - AMD Opteron 16-core processor with 64 GB ram.
  - 26TB RAID-6 storage
- Render time:
  - 17 hour bake
  - 48 hours to render in Cycles on Blender 2.69
- Rendered by Corvus Computing in Sunnyvale, California.

Rob and Jay's Render: Particles

Next lecture: Algorithmic animation Part 2 of 2

Soft body simulations with collision detection:

      Cloth,

      Hair,

      Rubbery (bouncy) objects.

For further reading…

- Blender uses the Bullet Physics Engine: http://www.BulletPhysics.org

- Blender Fire Dynamics Simulator:
  https://code.google.com/p/blenderfds/

- Fluid dynamics engine (C++ code) using Navier-Stokes equations:
  http://adfc.sourceforge.net/index_en.html