DD1354

Models and Simulation

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What is DD1354?
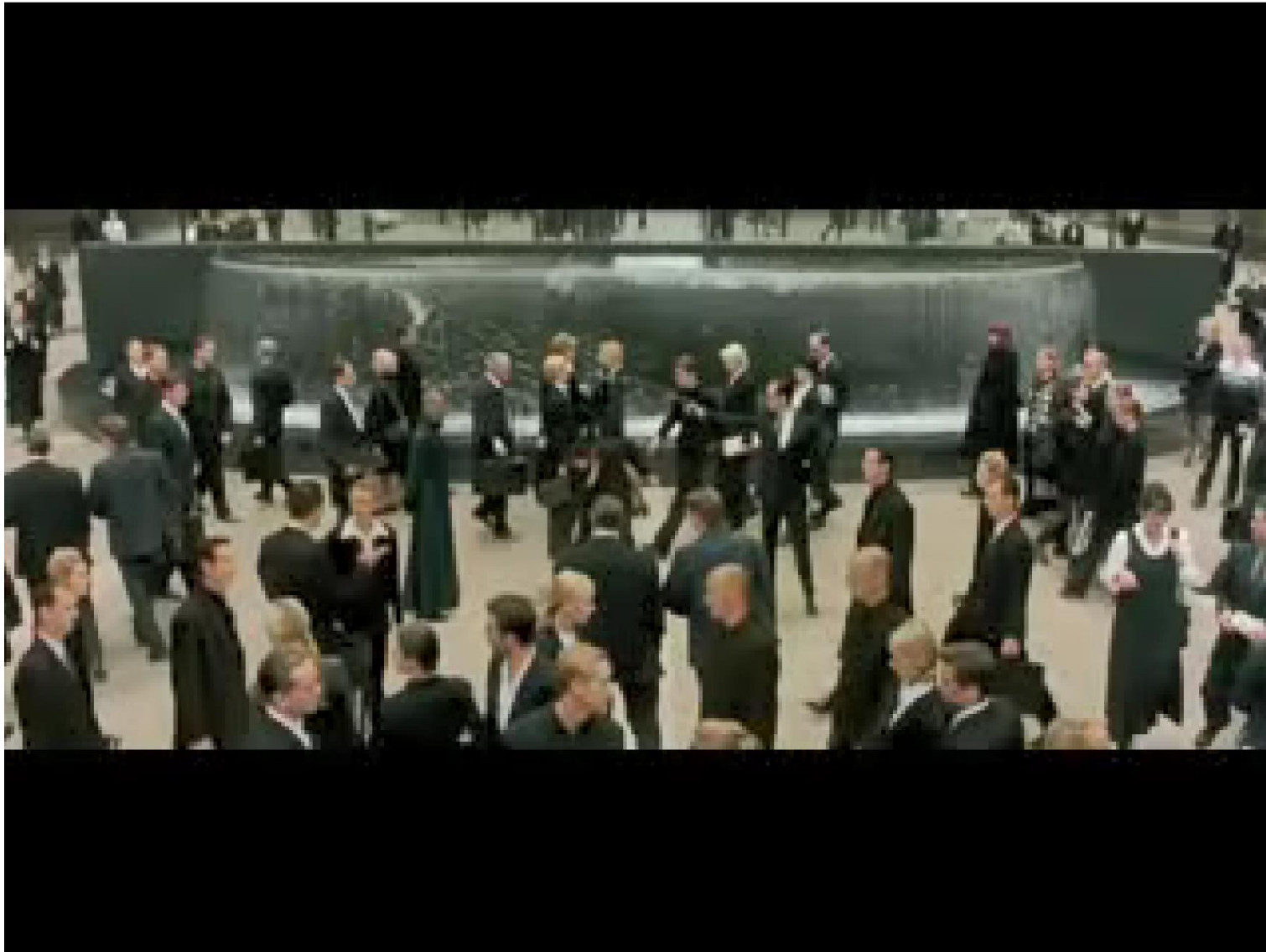

Video 1

The Matrix, Warner Bros. Pictures

DD1354 Models and Simulation

Computer game **technologies**…
As an introduction to physics modelling
and simulation

Simulating Physical Laws

Video 2

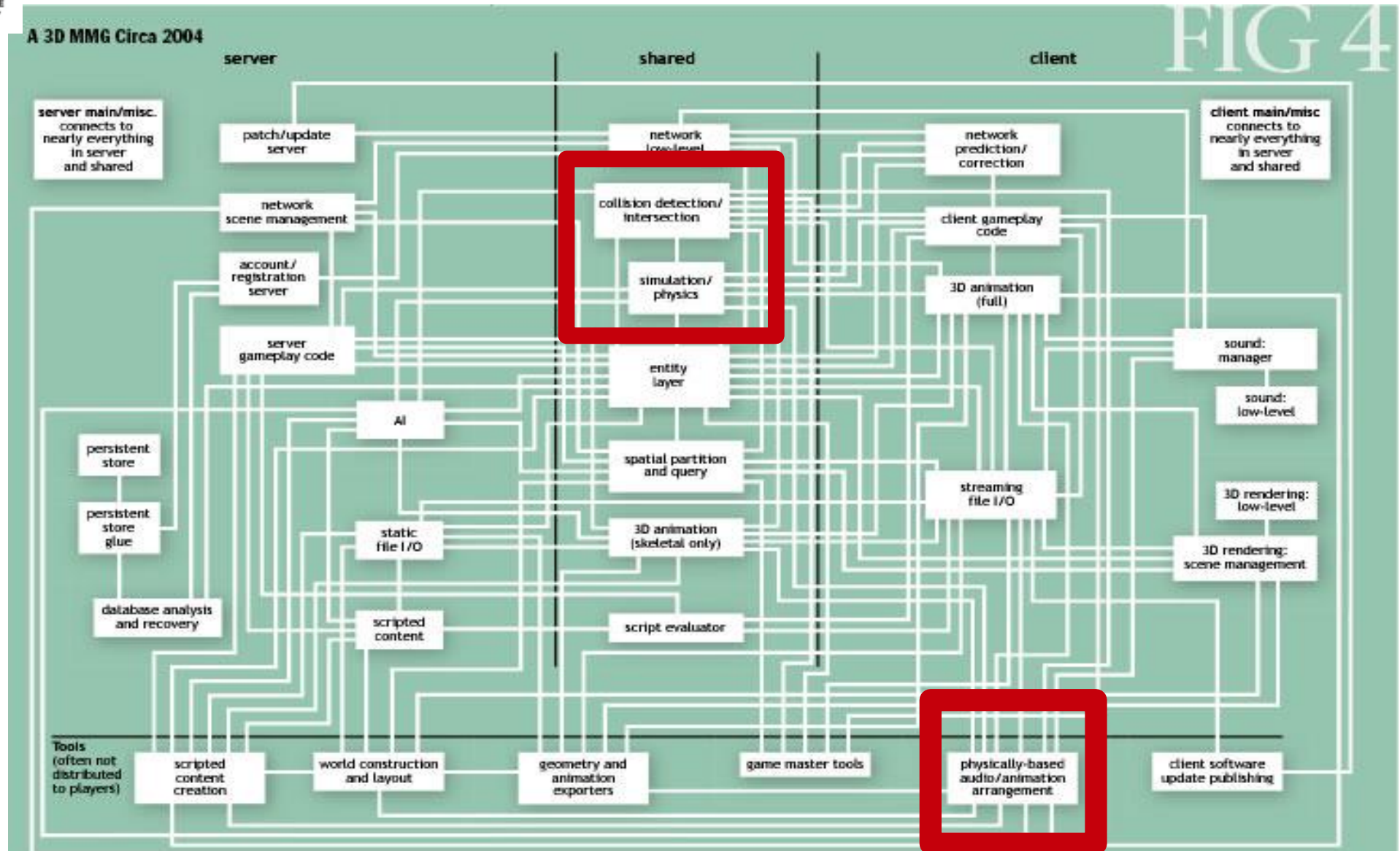Half-Life 2, Valve

Game Complexity: 2004
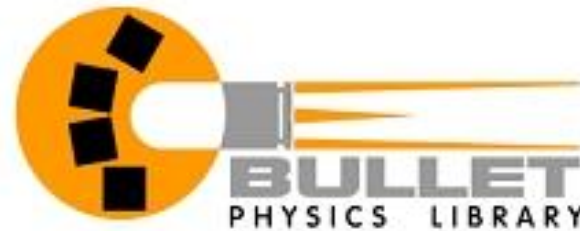

Image courtesy [Blow2004]

Physics Middleware

Mainly rigid-body and cloth simulation
Some fluids

Havok

Bullet

ODE
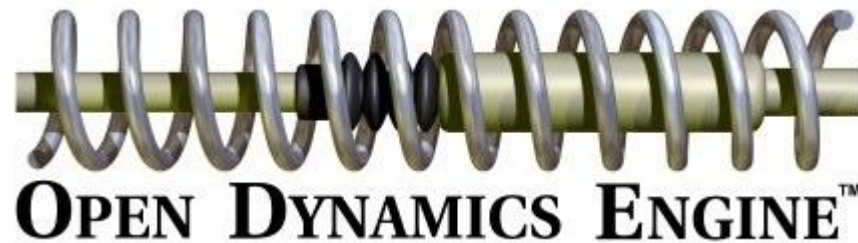
Physics Middleware

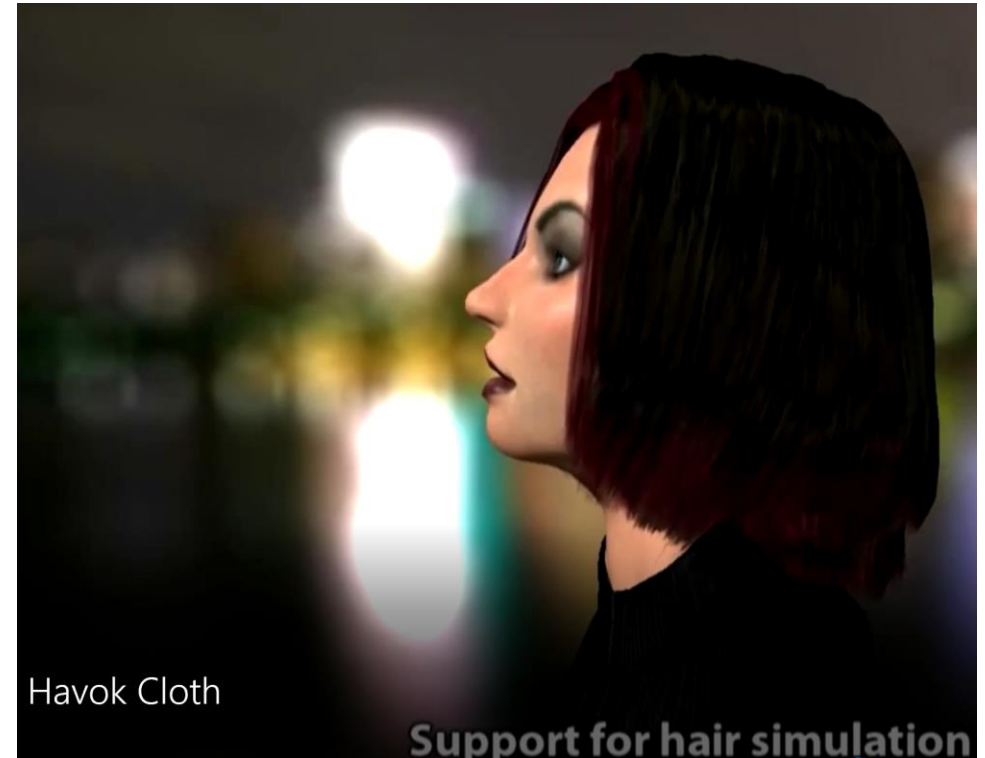Havok Destruction
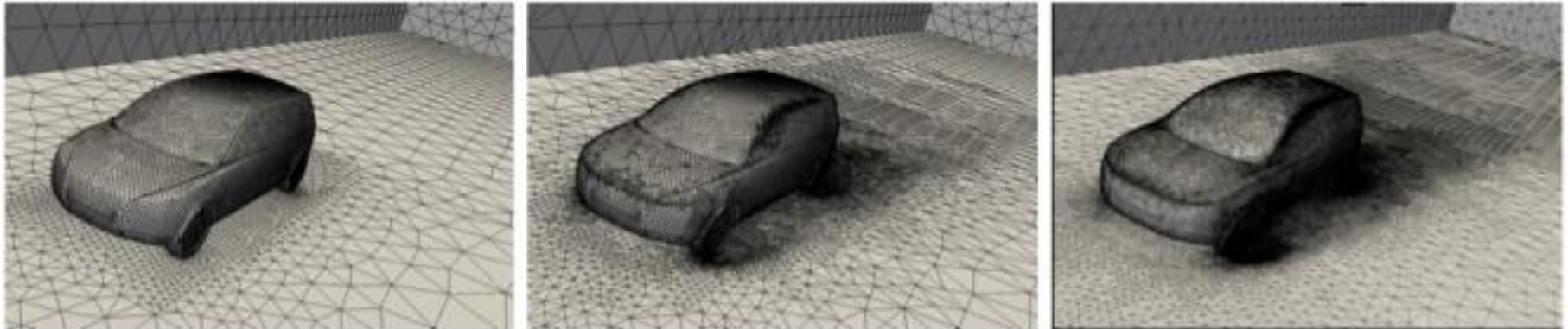Layered Materials like Plaster

Havok Cloth
Support for hair simulation

Havok physics

Applications

- Entertainment (movies)
- Science (virtual laboratories)
- Development (virtual prototyping)
- Society (urban planning)
- Environment (climate)
- Medicine (diagnosis and treatment)

…

The Course Team

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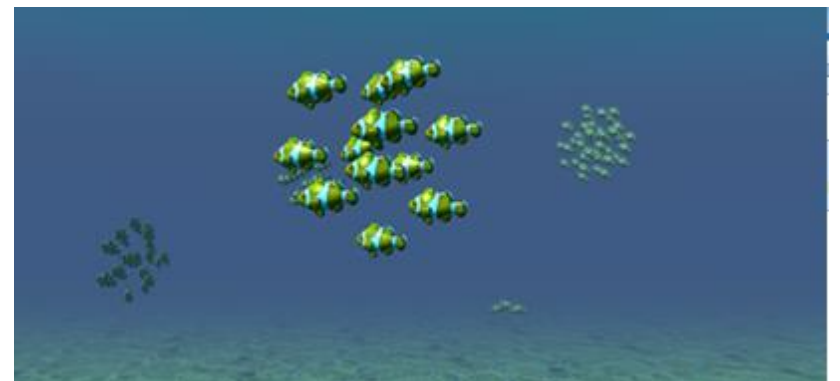
Details

6.0 credits, P3

Four labs + project

- Lab 1: Solar system
- Lab 2: Boids
- Lab 3: Mass-spring systems
- Lab 4: PDE models

Project

- Your choice

See DD1354 KTH Social

Tools you will use

https://www.blender.org/

https://unity3d.com/

DD1354 is a good basis for...
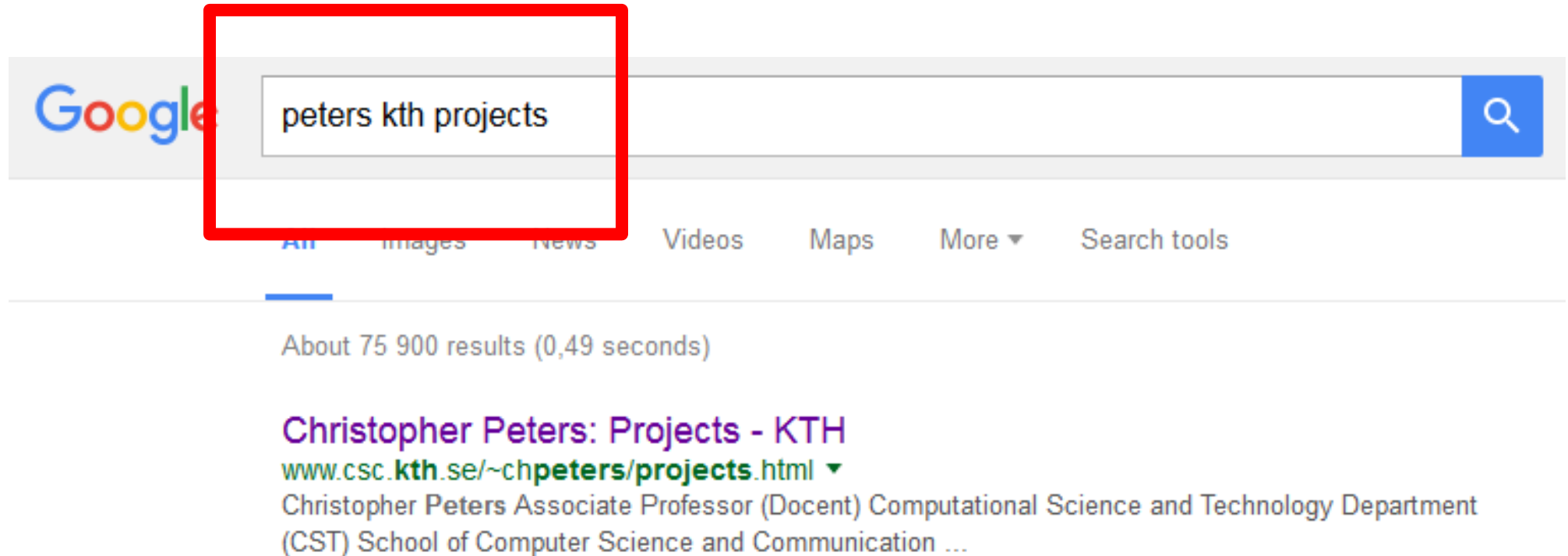
Master tracks in:

- Scientific Computing (CSSC)
- Visualization and Interactive Graphics (CSVG)

For example (CSVG):

- **DH2320**, Computer Graphics and Visualization
- **DH2323**, Computer Graphics and Interaction
- **DH2413**, Advanced Graphics and Interaction
- **DH2560**, Computer Games Design

See: https://www.kth.se/social/course/DH2323/page/dgi16-project-blogs/

Finding this information
and more…

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