

PG430 – Innføring i grafikkprogrammering

Forelesning 11

André R. Brodtkorb
Andre.Brodtkorb@nith.no

Overview

- Info
- Liveprogrammering
- Demoer
- Lab: Mappe 4

Informasjon

- Kort forelesning i dag, så hjelp med mappe 4
- Eksamen er 12.12, som i eksamensplanen
- Forelesning 28.11 blir i rom 45

Liveprogrammering

- Phong shading fra lab forrige time

Utvikling av grafikk

- Siden dataspillenes begynnelse har grafikken stadig blitt forbedret
- En tommelfingerregel er at det man ser som «state-of-the-art» i rendering i film blir spill-grafikk etter ca fem år.
- Høres utrolig ut intill man ser fem år tilbake i tid

Spill-nostalgi

- Alley cat (1983)
<http://www.youtube.com/watch?v=uZDG4dIU5uY>
- Paper boy (1984)
<http://www.youtube.com/watch?v=dJXdIrdws2s>
- Beast (1986)
<http://www.youtube.com/watch?v=gtDq0EGSDSg>
- Test Drive (1987)
<http://www.youtube.com/watch?v=9yU8b8atj80>
- California Games (1987)
<http://www.youtube.com/watch?v=02VKSTQhaLU>
- Contra (1988)
<http://www.youtube.com/watch?v=YBMQhKK3Ctk>
- Stunts (1991)
<http://www.youtube.com/watch?v=TxANYMqd8cY>
- Wolfenstein 3D (1992)
<http://www.youtube.com/watch?v=C00n4rDUMNo>

Spill vs Spillefilm

- Twisted Metal (GotY 1995)
<http://www.youtube.com/watch?v=iL-zkNpgXas>
- Toy Story, 1995
<http://www.youtube.com/watch?v=KYz2wyBy3kc>
- Tony Hawks Pro Skater (GotY 2000)
<http://www.youtube.com/watch?v=oLQRr2FeMak>
- Monsters inc, 2001
<http://www.youtube.com/watch?v=cvOQeozL4S0>
- Gears of war (GotY 2006)
<http://www.youtube.com/watch?v=ccWrbGEFgl8>
- Ratatouille, 2007
<http://www.youtube.com/watch?v=c3sBBRxDAqk>
- Modern Warfare, 2011
<http://www.youtube.com/watch?v=Z7xL5Tz7VUk>
- Cars 2, 2011
<http://www.youtube.com/watch?v=lg5hj2c5Nkk>

Dagens trend: mer fysikk

- Det som er hot i dagens spill er å bruke grafikkortet til fysikkberegninger
- Real Time 3D Fluid and Particle Simulation and Rendering:
<http://www.youtube.com/watch?v=RuZQpWo9Qhs>
- PhysX fluid in Alice Madness returns
<http://www.youtube.com/watch?v=3Y23IfCCmIM>
- Physically simulated clothing by CCP using NVIDIA APEX
<http://www.youtube.com/watch?v=mrtwESnTOwY>
- APEX Destruction Demo
<http://www.youtube.com/watch?v=grIVUDH4FIM>

NVIDIA Demos 1/2

- Dawn (2002) - <http://www.youtube.com/watch?v=4D2melv08rQ>
- Dusk (2002) - <http://www.youtube.com/watch?v=bw2aEklugFQ>
- Vulcan (2002) - <http://www.youtube.com/watch?v=tuj4bGc5ZTk>
- Timbury (2004) - <http://www.youtube.com/watch?v=hJ0ycLo3PFM>
- Nalu (2004) - <http://www.youtube.com/watch?v=9K8masjDBrl>
- Clear Sailing (2004) - <http://www.youtube.com/watch?v=Fjk783IUzGE>
- Mad Mod Mike (2005) - <http://www.youtube.com/watch?v=Vf2gAID7JSc>
- Luna (2005) - http://www.youtube.com/watch?v=RfHfFEy_7_0
- Adrienne (2006) - <http://www.youtube.com/watch?v=HaFeTybuEIl>
- Froggy (2006) - http://www.youtube.com/watch?v=l2JC_bXOBdQ
- Box of smoke (2006) - http://www.youtube.com/watch?v=si_OwlReSUY
- Cascades (2006) - <http://www.youtube.com/watch?v=pO5-q0Ho5Yw>
- Human Head (2007) - <http://www.youtube.com/watch?v=LIGWAYS5uRw>
- Medusa (2009) - <http://www.youtube.com/watch?v=IKXH0b7z6Mk>

NVIDIA Demos 2/2

- Design Garage (2010) - <http://www.youtube.com/watch?v=kcP1NzB49zU>
- Supersonic Sled (2010) - <http://www.youtube.com/watch?v=DUfzab0k6zc>
- Raging Rapids (2010) - <http://www.youtube.com/watch?v=g5LkSYQG7o4>
- Hair (2010) - <http://www.youtube.com/watch?v=jG7jfRDBocs>
- Island (2010) - <http://www.youtube.com/watch?v=xGhRmVUt>
- Alien vs Triangles (2010) - http://www.youtube.com/watch?v=GQJ7_eaM05E
- Endless city (2010) - <http://www.youtube.com/watch?v=KUsdBDcd7Sg>
- Stone Giant (2010) - <http://www.youtube.com/watch?v=wzXqyabSmFU>
- Crank (2010) - <http://www.youtube.com/watch?v=SbSo7onX9ql>

Lab

- Hjelp til Mappe 4, eller
- Shaderprogrammering
 - Implementer cel shading
 - Tegn først med linjer og tykk linjestørrelse
 - Bruk så shader til å lage toon-shading med fargebånd

