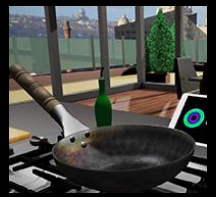
Advanced Graphics and Interaction 2015: Lecture 15
Proposals for Project 2

Colorsplat	Other Room	Wheelchair Canon	Hellthy Kitchen	Bloodcells with Friends	Submarine in a Fishtank	Spinnulator	SprayIt	Aerial
Emilie Viktor Viktor	Lennart Mikael Huiting	Johan Omid Johan Stefan	Victor Anton Max	Douglas Niklas Rasmus	Erik Simon Mårten	Adrian Robin Vincent	Prasanth Maxime Robert	Anton Erik Johan Daniel






Mario Romero 2015/11/10

KTH VETENSKAP OCH KONST

VICSTHLM VISUALISATION INTERACTION COLLABORATION

AGI15 Calendar: link

- Mon 31 aug 15:00-17:00 — Lecture 1 – Introduction
- Tue 1 sep 13:00-17:00 — Lecture 2-3: Forming Groups and Brainstorming
- Mon 7 sep 15:00-17:00 — Lecture 4: Proposals
- Thu 10 sep 10:00-12:00 — Lecture 5: Discussion based on Proposals
- Mon 14 sep 15:00-17:00 — Lecture 6: Hello World Demos
- Thu 17 sep 10:00-12:00 — Lecture 7: Discussion based on the Hello World Demos
- Tue 22 sep 10:00-12:00 — Lecture 8: Preparing ForskarFredag 2015
- Fri 25 sep 8:00-16:00 — ForskarFredag
- Mon 28 sep 15:00-17:00 — Lecture 9: Reflecting on ForskarFredag
- Mon 5 oct 15:00-17:00 — Lecture 10: Agile Development 1 towards Comic Con - Gamex 2015
- Mon 12 oct 15:00-17:00 — Lecture 11: Agile Development 2 towards Comic Con - Gamex 2015
- Fri 30 oct 9:00 – Sun 1 Nov 17:00 — Comic Con Gamex
- Mon 2 nov 15:00-17:00 — Lecture 12: Reflecting on Comic Con Gamex
- Tue 3 nov 13:00-17:00 — Lecture 13-14: Forming new groups and brainstorming project 2
- Tue 10 nov 10:00-12:00 — Lecture 15: Proposals Project 2
- Tue 17 nov 10:00-12:00 — Lecture 16: Hello World Demos for Project 2
- Tue 24 nov 10:00-12:00 — Lecture 17: Agile Development 1 for Open House
- Tue 1 dec 10:00-12:00 — Lecture 18: Agile Development 2 for Open House
- Fri 4 dec 15:00-19:00 — VIC AGI15 Open House

Proposal for **ColorSplat**

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Motivation

- Help people stay fit and do sports while playing.
- Help rehabilitation of people with movement difficulty.
- Practice creating graphical elements

Goals and Challenges

- Goals
  - Create a game that forces the user to move
  - Create a game that works for people who have difficulty to move
  - Make awesome graphics
- Challenges
  - To combine the first two goals.
  - To make awesome graphics
  - Use 4K screen and Kinect !

Related Work

- Splatoon - Nintendo Wii U game
  Realistic 3D splatting paint
  http://splatoon.nintendo.com

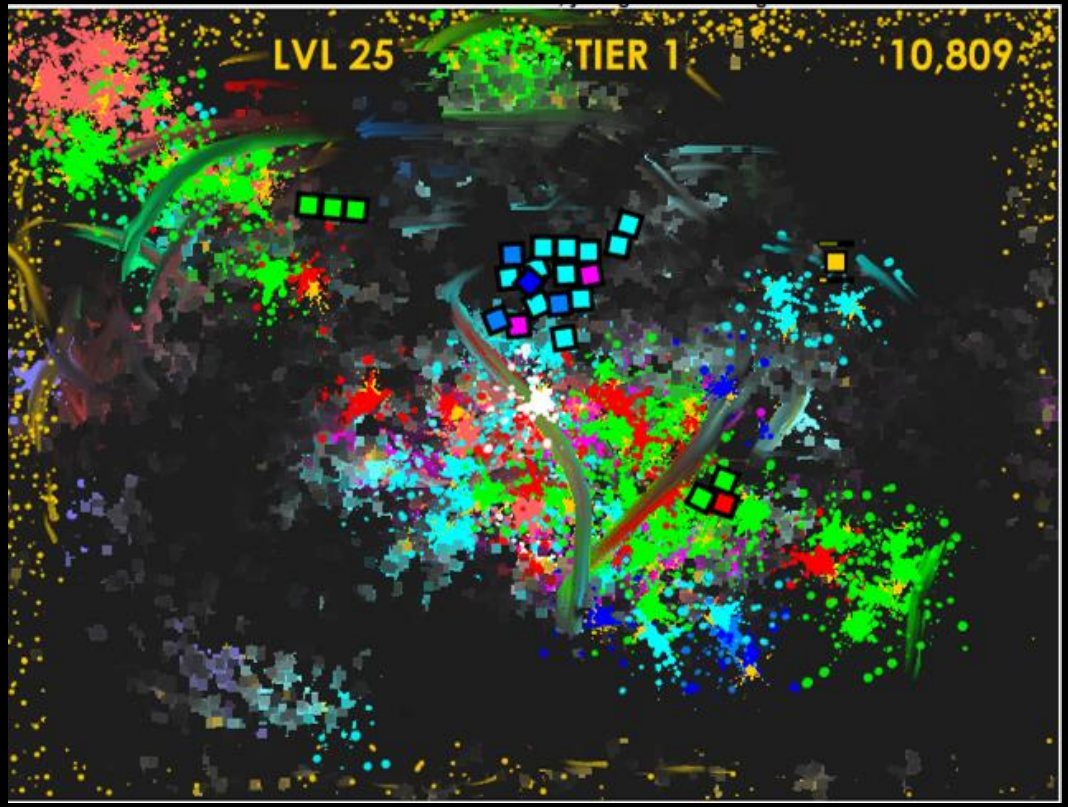
- Battle Paint
  2D shooting game
  http://armorgames.com/play/10828/battlepaint

- Reflexion Health
  Rehabilitation software using Kinect
  http://reflexionhealth.com

- Inspirational articles about viscous liquids
  https://cs.uwaterloo.ca/~c2batty/

Splatoon

Battle Paint



Reflexion Health

Thank you!

Questions?

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Viktor Leandersson vlea@kth.se

Teacher: Mario marior@kth.se

Colorsplat feedback

4K stereoscopic screen game
3 people? How many in general?
Use movement - force movement to be no-steps, one-step, two-steps. Define area of interaction on the floor. You need to mark the ground - let people know where they need to move
How do you lock-on a target?
Settings for sensitivity
create graphical elements
focus: liquids and color effects
Where will the kinect live? You can use the kinect over the screen, but don't let the users exit the field of view/interaction.
awesome graphics - be more precise
related work - splatoon, battle paint,
liquids
paint is a viscous liquid -
Experience with kinect - viktor
Kinect 2
How do you use the Kinect
one hand aims another hand throws
Will you use Unity? WebGL? What?

References:
Real-Time Paint: http://onlinelibrary.wiley.com/doi/10.1002/cav.95/epdf
Real-Time Fluid: http://www.intpowertechcorp.com/GDC03.pdf
https://www.youtube.com/watch?v=7k8DRJW4LDY
https://www.youtube.com/watch?v=-foZ64bIxEw
http://pub.ist.ac.at/group_wojtan/projects/surface_tension/surface_tension.html
http://pub.ist.ac.at/group_wojtan/projects/thin_fluid_features/thin_fluid_features.html
https://www.youtube.com/watch?v=ROnk1Jd6ueA
https://www.youtube.com/watch?v=Sn5nSFg2e5Y
https://www.youtube.com/watch?v=jNxkV2T_jew

Other Room

Lennart, Mikael & Huiting

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A window to another room

- Projection on a wall to create illusion of space
- Nature like realistic animations
- Sound to interact with the environment
  - Blow to create wind
  - Whistle to make
  - trees grow
  - Snap fingers to create campfire
  - Clap to make flower petals drift and fall on the water surface
  - ...

Motivation

Creating a peaceful scene, free from disturbance

Simple interaction to allow for a lot of experimenting with graphic elements

A way to make your small room look bigger

Goals

- Create the illusion that there is a space behind the projection
- Learn WebGL and one individual advanced graphic element

Challenge and Risk

- How much should we push for realism in the scene?
- The product may give a poor result due to individual implementation of features failing

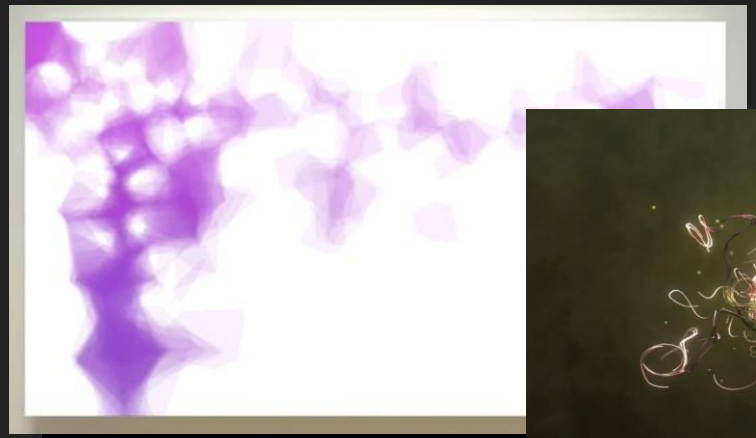
Related work

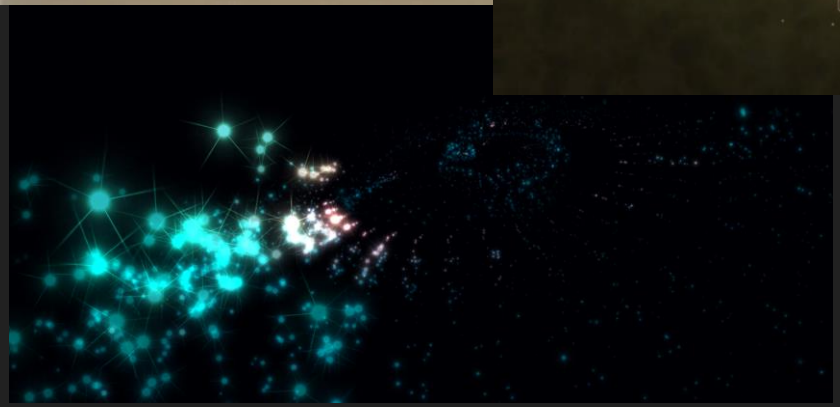
So many great examples of audio visualization out there!

> Speakasso

> Bird Sounds Visualised

> A dive in music





Methods and Technique

- WebGL together with Three.js
- Web Audio API
- Projection

Work plan: Create a simple base together, then branch out into independent individual features

Proposed Related Papers

Procedural generation of plant life:

(OBS! old)
Weber, Jason, and Joseph Penn. **"Creation and rendering of realistic trees."** *Proceedings of the 22nd annual conference on Computer graphics and interactive techniques*. ACM, 1995.

GARG, S. (2011). ***Procedural Modeling and Constrained Morphing of Leaves*** (Doctoral dissertation).

Real-time realistic volumetric fire:

Christopher Horvath and Willi Geiger **"Directable, high-resolution simulation of fire on GPU."** *SIGGRAPH '09 papers.* ACM, 2009.

Alfred R. Fuller et. al. **"Real-time procedural volumetric fire."** *Proceedings of the 2007 symposium on Interactive 3D graphics and games.* ACM, 2007.

Animated natural water surface:

Enright, Douglas, Stephen Marschner, and Ronald Fedkiw. "**Animation and Rendering of Complex Water Surfaces**." In Proceedings of SIGGRAPH 2002.

Stam, Jos. "**Random Caustics: Wave Theory and Natural Textures Revisited.**" Technical sketch. In Proceedings of SIGGRAPH 1996, p. 151.

Thank you for listening!
Questions?

Feedback to Other Room

projection of wall for illusion of other space
4k stereo
interaction through sound
blow - wind; whistle to make tree grow; clap; snap
voice - use Speakasso DSP??
quality of life - concentrate more on meditation
empty our mind from daily activities
illusion - other space behind projects
will you like to use first person perspective? NO
realism? NO
non-photorealistic rendering
related work
Speakasso
Bird Sounds
dive in musics
music interaction project
abstract representations
Difficult:
there is no right or wrong - challenge!!!
there is no target - challenge!!!
WebGL and Three.js
will you use 4K?
procedural generation of plant life
real-time realistic volumetric fire
real-time realistic volumetric water
c-awards flame project http://www.cawards.se/project/kill-it-with-fire/

depth - 3D stereoscopic rendering? Perhaps
sense of perspective ?
not flat picture on wall?
a room on the other side?
look wiggle 3D - illusion of 3D
track users' head?
really artistic - behave realistically?
interactive painting - artistic - aesthetic
non-photorealistic - cartoon style
YA3 -

References:

Real-Time Paint: http://onlinelibrary.wiley.com/doi/10.1002/cav.95/epdf
Artistic rendering: http://core.ac.uk/download/pdf/8767749.pdf
http://web.cs.ucdavis.edu/~ma/SIGGRAPH02/course23/notes/papers/Kaplan2002.pdf
http://www.heathershrewsbury.com/dreu2010/wp-content/uploads/2010/07/SegmentationBased3DArtisticRendering.pdf
https://www.audimax.de/fileadmin/hausarbeiten/informatik/Seminararbeit-Informatik-Non-photorealistic-rendering.pdf
http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8659.2011.02075.x/pdf

Examples in games:

https://www.youtube.com/watch?v=7gDJ4hQ1wWc
https://www.youtube.com/watch?v=QyogWApZl68
https://www.youtube.com/watch?v=QyZ0tyq-zLM
https://www.youtube.com/watch?v=ECHnqMklU1A
https://www.youtube.com/watch?v=ksXswh31VYo
https://www.youtube.com/watch?v=CYOfW-ae5sk

Wheelchair Game

- Proposal -

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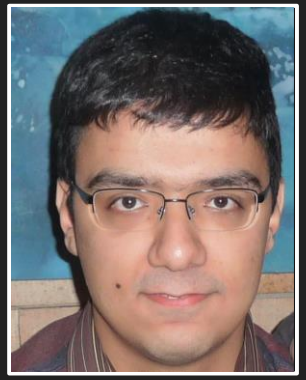

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Motivation

- Turn an important exercise within wheelchair training into a fun game.
- Learn more core graphics (WebGL) compared to using Unity.
- Easy interaction tech (phone) so we can focus on the graphics.

Goals and Challenges

- **Goals**
  - Single player game with smartphone attached to a wheelchair as controller
  - Cool graphics with WebGL
  - Transmit the rotation of the phone to the browser
  - Create a fun and new gaming experience
- **Challenges**
  - Make the control feel responsive.
  - Latency in the communication between the phone and the browser.
  - Struggling with WebGL and state of the art graphics theory.

Related Work

- "KINECT wheels: wheelchair-accessible motion-based game interaction"
  - Gerling, Kathrin M., Michael R. Kalyn, and Regan L. Mandryk. CHI'13 Extended Abstracts on Human Factors in Computing Systems. ACM, 2013.
- “Creating wheelchair-controlled video games: Challenges and opportunities when involving young people with mobility impairments and game design experts”
  - Kathrin M. Gerling, Conor Linehan, Ben Kirman, Michael R. Kalyn, Adam B. Evans, Kieran C. Hicks, 2015
- The Wheelchair Driving Simulator
  - playfulshark.com/wheelchair-driving-simulator/ (2009)
- SpaceLamb
  - chromeexperiments.com/experiment/spacelamb (2015)

KINECT Wheels

The Wheelchair Driving Simulator

SpaceLamb

https://www.chromeexperiments.com/experiment/spacelamb

Methods and Techniques

- Engine / Framework: WebGL and smartphone app using web technologies.
- Output Device: Common computer screen
- Input Devices: Smartphone App + Wheelchair, maybe an additional finger button(?)
- Sounds: Success / Fail / Hit / Backgroundmusic
- 3D Assets: Created by our own, will depend on gameplay
- Tools: Github for Code Hosting / Freedcamp for Project Management
- The whole setup could be published as public github repo for people who want to build successors
- Interaction Paradigm: Wheelchair

Thank you!

Questions?

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http://www.thereisnowebpageyet.com/

Discussion about the gameplay

- We are not sure of what type of gameplay we want.
- What we do know is that we want to use the pitch and yaw from the smartphone as controller.
- Three ideas:

    1. Shooting game (cannon, bow or whatever) and you control the aim.
    2. Driving game with a fixed speed and you control the turning and jumping.
    3. A fly simulator with a fixed speed and you control the pitch and yaw.

- What do you think?

Feedback to Wheelchair Canon

real wheelchair!!!
webGL
phone rotation
web sockets
Kinect wheels - use kinect rotation - steering and depth - speed
mobility and game design
wheelchair driving
spacelamb
what is the objective of the game?
discussion - how the game could look?
Flying?
Pitch ?
platform
level 0 - just left and right, forward and backward
platform - level 1
“Wheely” pitch - level 2

target audience - people with recent injury (permanent or long term)
want to be useful - what is useful to practice?
balance
pitch -
You have to think about the graphics elements.
Think about fog, clouds, fire, light dispersion, path creation, virtual camera control. Try not to focus on game play.

Some inspiration:

http://elib.uni-stuttgart.de/opus/volltexte/2012/7960/pdf/BCLR_0006.pdf
http://publications.lib.chalmers.se/records/fulltext/155126.pdf
http://www.awwwards.com/22-experimental-webgl-demo-examples.html
https://www.chromeexperiments.com/webgl,motion-control?page=0
https://www.chromeexperiments.com/webgl?sort=popular

Proposal for Project 2

Cool
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Cool
Photo of
Student 3

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Hellthy Kitchen

Motivation

- Promote healthy living through cooking
- People who cant cook, can now learn with Gordon Ramsey!
- First ever realistic cooking simulator in VR

Goals and Challenges

- Goals
  - Promote heathy living
  - Easy recipes
  - Having fun while cooking (adding humorous elements)
- Challenges
  - Create a realistic kitchen enviroment
  - Mesh cutting (Cutting tomatoes for example)
  - Get the rotation from the android phones.

Related Work

- Surgeon Simulator 2013
- I am Bread
- CyberCook Taster

Surgeon Simulator 2013

I am Bread

CyberCook Taster

Methods and Techniques

- Photorealistic rendering
- Different lightning models
- Bumpmapping
- 3D modeling (Making realistic models)
- Kinect, oculus rift and mobile phones.
- Socket IO - for sending handrotation from phones

Thank you!

Questions?

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Feedback to Hellthy Kitchen

virtual reality cooking game

healthy living through cooking

learn healthy recipes

realistic real time rendering

easy recipes

fun while cooking

cutting - mesh cutting

two android phones

surgeon simulator 2013

I am bread

realism and interactive

methods

photorealism

lighting models

bumpmapping food

3d modeling

kinect oculus rift

mobile phone - hands - rotation and grab

wii motes

sensor

sonification - kitchen demo

soundscape

focus on the graphics -

simplify the healthy cooking, modeling, interacting

reverse engineer one recipe that has four or five interesting ingridients

focus on special effects: fire, water, smoke, burning oil, viscous liquids (oil, eggs), powdered substances (flour)

leap motion - no!

References:

http://link.springer.com.focus.lib.kth.se/article/10.1007/BF01905562

http://link.springer.com.focus.lib.kth.se/article/10.1007/s00371-012-0684-1

http://ieeexplore.ieee.org.focus.lib.kth.se/stamp/stamp.jsp?tp=&arnumber=5999663

Project 2

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Blood Cells with Friends

Concept

A piece of medicine has to be delivered to the right part of the body. One player controls a piece of medicine inside of a person with a controller, trying to fight towards the end goal, curing the patient.

All the action is shown on a PixelSense 2 tablet screen, where one to three other players interacts with the game field, trying to help the medicine reach its goal.

Motivation

- Learn about the human body in a fun way
- Interesting collaborative mechanics
- Unique social interaction
- Operate with your friends

Goals and Challenges

Goals

- Provides a fun learning experience
- Learn about the human immune system through tool tips
- Emphasizes cooperation and communication

Challenges

- Getting the PixelSense SDK to work well with Unity

Related Work

Infection
PC, 2014

Trauma Center
Atlus, 2005

Gauntlet II
Atari, 1986

Infection


INFECTION
INFECTIONS: 7
CELLS: 71
«295
INFECTIONS: 0
CELLS: 0
«50

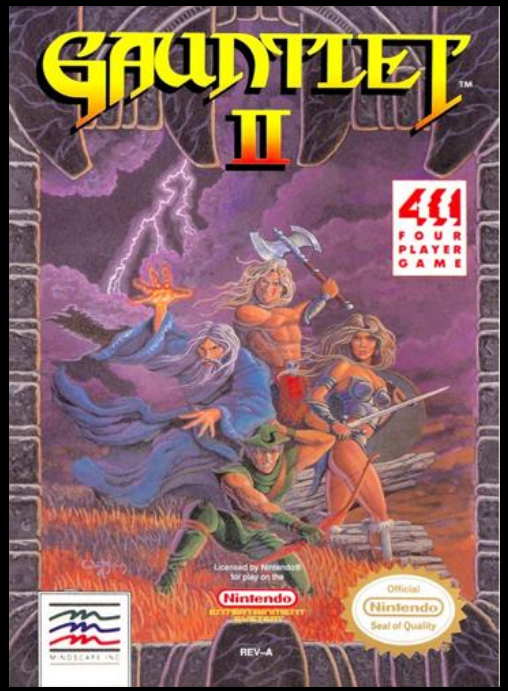

INFECTIONS: 0
CELLS: 1
«38

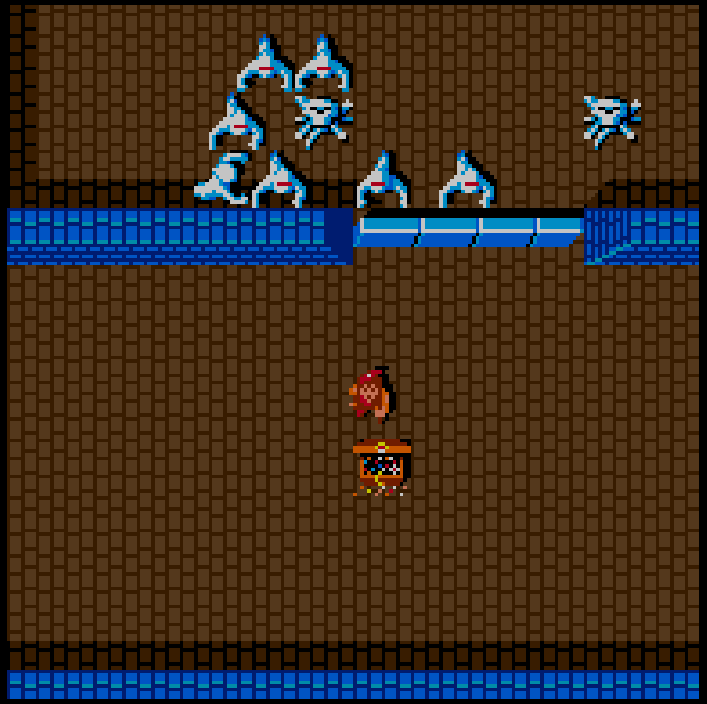

INFECTIONS: 0
CELLS: 9
«24

Trauma Center

- Atlus 2005-2010

Gauntlet II


GAUNTLET
II
4
FOUR
PLAYER
GAME
Nintendo
REV-A

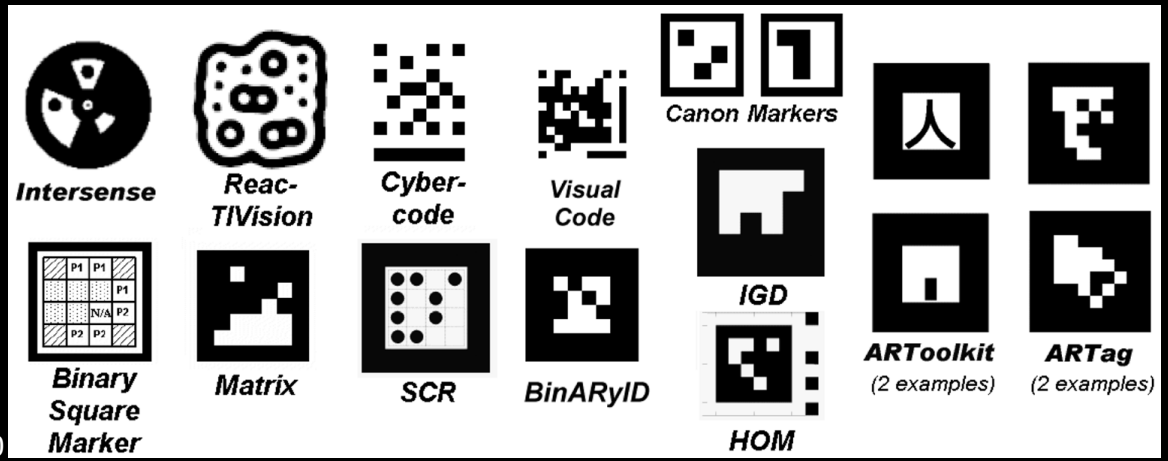



GAUNTLET
II
LEVEL 1
ELF
SCORE HEALTH
200 1979
WARRIOR
SCORE HEALTH
0 0
PRESS START
WARRIOR
SCORE HEALTH
0 0
PRESS START
ELF
SCORE HEALTH
0 0
SELECT HERO

PixelSense 2.0

Methods and Techniques

- PixelSense SDK, PixelSense SDK -> Unity
- Fiducial Tracking (fiducials placed on physical entities)
- Xbox 360 controller
- Hands and movement



Thank you!

Questions?

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Niclas Ericsson - nerics@kth.se
Rasmus Ansin - ransin@kth.se

Individual Contributions

- Niclas
  - Graphics, programming
- Douglas:
  - Programming, level design
- Rasmus:
  - Programming, gamification

Feedback to Blood Cells with Friends

one player is controlling medicine inside the body
top down shooter
shots viruses and bacteria
evil bacteria
collaborative game around pixelsense
operate on body at same time
different scales?
white blood cells
motivation - learn about human body in fun way
infoboxes
bloodcells in body
collaborative experience and mechanics
fun experience to learn about human body
goals
learning exp
human immune system
cooperation and communication
challenges
pixel sense sdk with unity

related work
infection 72 hours
top-down shooter works for 2D floorplans
trauma center
markers on table - good!!!
ER experience -

game of operation!
would you like to do something like this, rather?

dexterity

xbox 360 controller

once upon a life! Inspiration

Why not focus on 3D printing interesting game objects that need to be extracted from the body, for example, like the game of operation? Focus on the visual aspects of the game. Focus on the graphics.

Submarine in a Fish Tank

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Mårten Norman

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Submarine in a Fish Tank

Motivation

Creating a relaxing and peaceful experience, while we learn more about:

- Stereoscopic 3D (AR like and 3D screens.)
- Model light, movement, physics in water
- Mesh drawing/generation/animation

Goals and Challenges

- Goals
  - Getting started in Unreal Engine and Blender
  - Simulate a very small submarine with scuba diver as 1:st person
  - Procedural generation of animated fishes.
- Challenges
  - Move from Blender to more advanced tools
  - Controls? Submarine hull or more like a jetpack?
  - Fish swimming is advanced math. Simplify!!

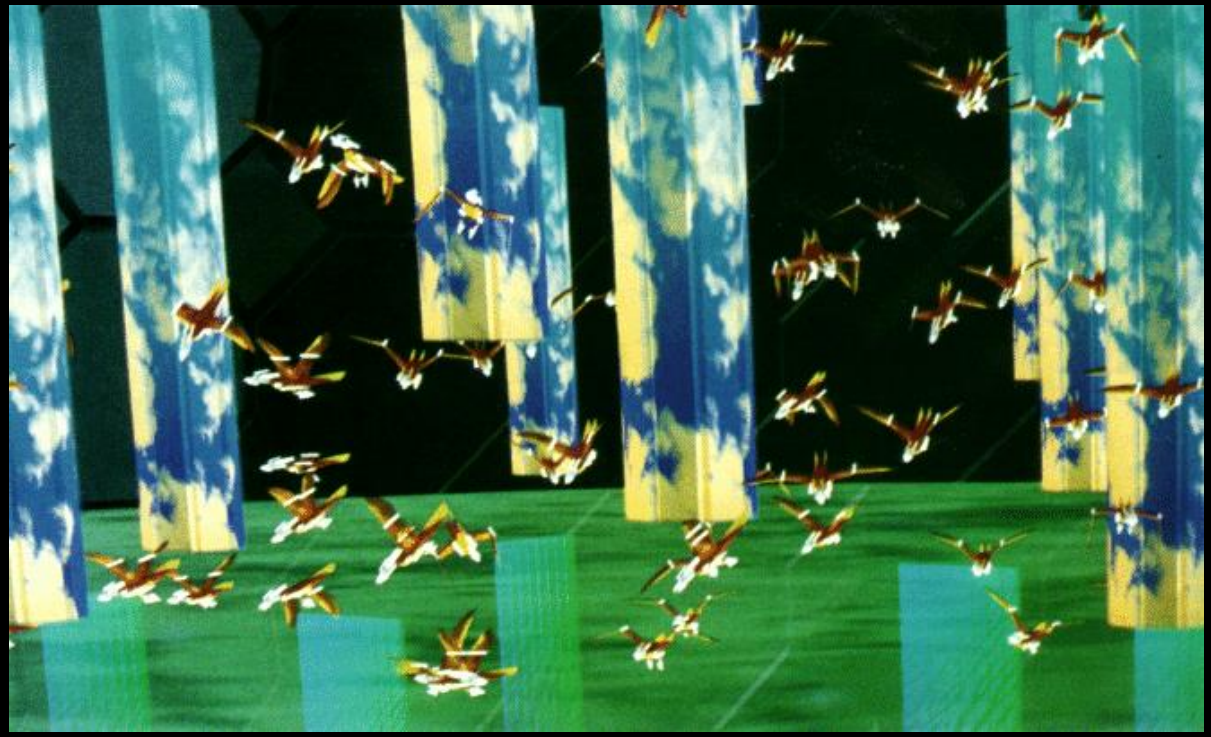
Related Work (maybe a Table?)

- Art-related performance, underwater weelchair
  - Sue Austin
  - 2012
- “Boid” flock simulation
  - Craig Reynolds
  - 1986
- Review of Fish Swimming Modes
  - Sfakiotakis, Lane and Davies
  - 1999

A very small submarine

- Can we simulate a similar ride with Occulus and Unreal Engine?
  - http://www.bbc.com/news/technology-19389396

“Boid” Flock Simulation



Review of Fish Swimming Modes

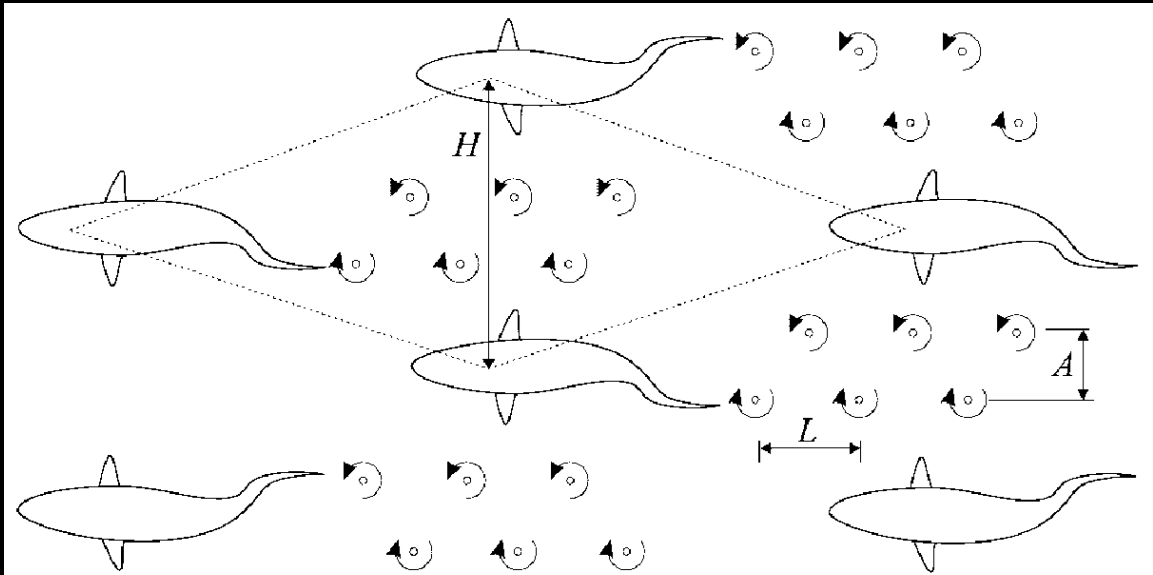


Fig. 10. Plan view of a horizontal layer of a fish school, showing its diamond-shaped building block structure.

Methods and Techniques

- Methods:
- Devices: Unreal Engine, Occulus, 3D-sound, Wii Nunchuk. Maybe 4K 3D screen.
- Relaxing mood for the overall experience.

Thank you!

Questions?

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Simon Fransson {email2@kth.se}
Mårten Norman {martenno@kth.se}
Teacher Mario Romero {email4@kth.se}

For more information go to: www.project1.se

Individual Contributions

- Erik will do
  - A lot
  - So much
- Simon will do
  - Fluid simulation underwater, 3d-sound, models, other animations
  - Interaction and devices (Oculus sdk etc). Learning UnrealEngine.
- Mårten will do
  - Physics based fish locomotion. Procedural fish generation.
  - Fine-tuning of non-trivial devices like Nunchuk, Occulus?

Feedback to Submarine in a Fish Tank

small scuba diver - helmet
outside of tank - skybox distorted by water and glass
calming - not stressed
don’t include movement .
oculus roller coaster
unreal engine
blender
drive around
simplify interaction
focus on graphics - natural motion of fish
colors
photorealistic?
create models?
YA3 camera movement
related work
boid
underwater wheelchair
how fish swim - acua-moose
how do fish move
how do schools move - Uppsala David Sumpter
3D sound
submarine
sony controller
who is going to use?
target audience?
use the oculus to relax…

aquarium
digital pet?
tamaguchi pet - seaman for dream cast
giving camera control back to the renderer - make it look natural, relaxing, fun, interesting

References:
http://webglsamples.org/aquarium/aquarium.html
http://www.fishgl.com/

Spinnulator Project Proposal

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Cool
Photo of
Student 2

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Spinnulator

Methods and Techniques

Tech: Unity and Kinect

- We will use Kinect to track a player on an excercise bike.
- We will use body motion as our main mode of interaction.

- Players will move forward by cycling on the bike.
- Horizontal movement will be done by tilting your head.
- Players will have to navigate obstacles and hills.

Goals and Challenges

- Goals
  - To learn more about advanced graphics.
  - To learn to implement the Kinect in a new way.
- Challenges
  - Focusing on graphics will take a lot of knowledge.
  - We need to get clear tracking with the Kinect.

Related Work

- Tour de Rue
- Temple Run

Tour de Rue

- Uses a stationary bike tracked by a Kinect
- The player can bike through environments in Google Maps
- Provides no real goal/challenge.

Temple Run

- Simple smartphone gameplay
- Three lanes
- Switch lanes with motion
- Avoid dangers, collect coins

Litterature review

- Real-Time Cloud Rendering for Games
  - Mark J. Harris
  - 2013
- Fast realistic lighting for video games
  - A.Iones, A. Krupkin, M. Sbert, S. Zhukov
  - Unknown publication year
- Bump mapping
  - James F. Blinn
  - 1978

Real-Time Cloud Rendering for Games

- Cloud rendering involves scattering light for realistic appearance, expensive if done much.
- Precomputed clouds can be used to “mask” weaknesses.

Fast realistic lighting for video games

- Different kinds of lighting can change how real a game looks.
- We need fast rendering, but still want it to look real.

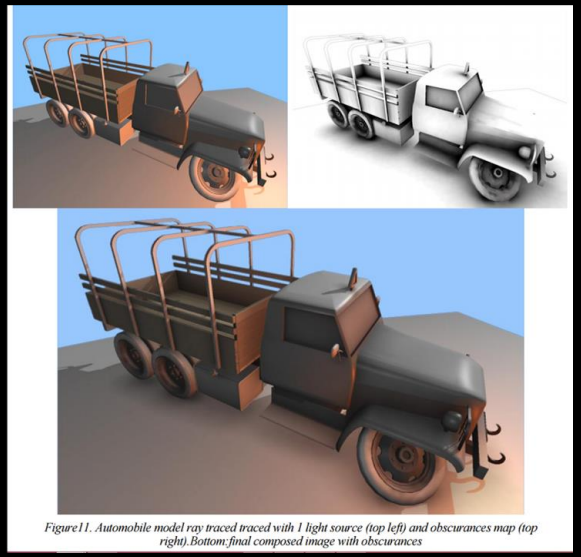
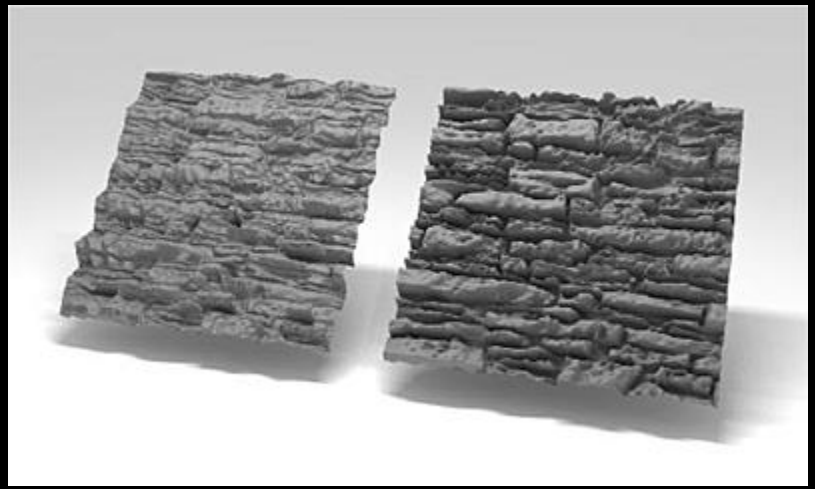


Figure11. Automobile model ray traced traced with 1 light source (top left) and obscurances map (top right).Bottom:final composed image with obscurances

Bump Mapping

- Used to create a realistic feel on any object
- Bumpy surfaces can be achieved even though the surface of the underlying object is flat.



Work Plan

Week 1: Set up game environment to track with Kinect

Week 2: Polish tracking, start working on game

Week 3: Add mechanics and polish

Week 4+: Graphics work depending on time

Risk Assessment

- Our project depends heavily on good tracking with the Kinect.
- Multiple physical motions might be difficult for certain players.
- Testing and debugging will be very exhausting.

Thank you!

Questions?

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Teacher: Mario Romero {marior@kth.se}

Feedback to Spinnulator

Focus on graphics from week 1!

unity and kinect
player on bike
head - spine
focus on graphics
implement the kinect for biking
shoulders
basic game idea
simple obstacle
Tour de Rue
track player on stationary bike
no real or challenge
Temple Run
avoid obstacles and grab coins
bike is not instrumented
real-time cloud rendering
expensive, scatter light
fast-realistic lighting for video games
ambient
bump mapping - create more depth to model
kinect first week
spinning class

legs up and down
ti sensor tag

how do you handle long-time player? excessive movement?
track feet and head

overkill to use kinect
sensors on bike? - ti sensortags
Feet movement
Color marker on pedals from side view
Head band

References for inspiration:
http://www.sciencedirect.com.focus.lib.kth.se/science/article/pii/S0097849306000859
http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.70.9689&rep=rep1&type=pdf#page=29

Project 2 proposal

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Advanced Graphics and Interaction
AGI15
2015/11/10

VICSTHLM
VISUALISATION INTERACTION COLLABORATION

KTH
VETENSKAP
OCH KONST

°~-<: SPRAYit :>-~°

Motivation

- Experience spray painting using Kinect
- Explore texture mapping of 3D objects in Unity
- Creating a platform to experiment perpective paints

Goals and Challenges

- Goals
  - Full body usage
  - Realistic aiming
  - A fun painting experience
- Challenges
  - Body mapping
  - Kinect integration
  - Development environment

Related Work

- Kinect Paint
  - Painting with hands, control with hands, no external input device
  - https://paint.codeplex.com
  - https://www.youtube.com/watch?v=Ycgb3LB6wkA
- Kinect iPad palette painting
  - Painting with hands, color selection through external device
  - https://www.youtube.com/watch?v=WaR-eCtOb_Y

Kinect Paint

Kinect Paint with iPad

Related Work - Papers

A gesture-based virtual art program for children with severe motor impairments: development and pilot study

Kinect hand recognition and tracking

KinectDraw: A **Kinect** based digital tool to visualize 2D figures and edit them in real time

Kinect enabled motion based touchless drawing tool

Methods and Techniques

- Kinect
- 4K screen
- Unity (C#)

Thank you!

Questions?

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Prasanth Korada {korada@kth.se}
Robert Amino {amino@kth.se}
Teacher : Mario Romero {marior@kth.se}

Questions?

Feedback to SprayIT

Your references are all about the Kinect. Focus on graphics please!
Make it easier on you and the user by defining a few colorless 3D models for people to paint on.
Allow users to select a 3D area in order to mask it easily, so that the spray paint stays on target.

Body painting
Proc gen of spray painting
Kinect
Track body
Change camera angle
Paint 3d model
Explore Kinect
Unity
Painting texture
Simplify - paint by numbers
Force people to keep arm high
Realistic aiming
3d stereos 4k
Body mapping
General debate environs
Related work
Kinect painting games
We paint
Kinect

Problem as U.S.
Find an experience
3d model
Spray paint
Apply color
Env around

References:

http://www-users.cs.umn.edu/~meyer/papers/konieczny-meyer-shimizu-vrst-2008.pdf

http://www-users.cs.umn.edu/~jkonie/Publications/ISVCFinal.pdf

http://www-users.cs.umn.edu/~meyer/papers/konieczny-meyer-npar-2009.pdf

http://dl.acm.org/citation.cfm?id=2656328

Real-Time Paint: http://onlinelibrary.wiley.com/doi/10.1002/cav.95/epdf

Real-Time Fluid: http://www.intpowertechcorp.com/GDC03.pdf

https://www.youtube.com/watch?v=xx5eMhTs5K0

Aerial

Sail Away

Proposal for Aerial

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Motivation

Create an interactive experience where you control a flying object in a calm environment, controlled by the movement of the head

Goals and challenges

Goal: Create an enjoyable and aesthetically pleasing interactive experience

Challenge: Learn three.js / WebGL

Description

Prio 1: The user controls a paper plane soaring above ground indefinitely

Prio 2 (if we have time): Collect “fuel” while flying to reach as long as possible

Inspirational project 1

http://inear.se/beanstalk/

Inspirational project 2

http://lights.helloenjoy.com/

Inspirational project 3

http://www.engadget.com/2010/05/14/student-moves-quadriplegics-with-wiimote-wheelchair-control-vid/

Methods and techniques

with THREE.js

Feedback to Aerial

Smooth experience
Movement of head
Quadriplegics
Spine injury what vertebrate
Three.js webgl
Phone gyro - websocket
Focus on graphics
1- paper plane in the air floating with currents
2 - collect dandelions
Flower PS3
4k stereo
Playfulness
Playification
Plane lands
Modular elements
Look at the references I have given other projects with similar aesthetic goals.
Look at clouds, fog, light dispersion, rain, snow...

References:
http://meson.press/wp-content/uploads/2015/03/9783957960016-rethinking-gamification.pdf (search playification)

Sneak preview/example

http://ctrlaltdelete.nu/example

Remember?

- Working core with simple graphics
- Freedom to fail on individual elements
- Show work
  - Research
  - Paper reading and understanding
  - Development
  - Integration
- Write a short individual report – December 11
  - At most
    - 1000 words
    - 3 references
    - 3 figures
    - 1 video-figure
- If working, working code
- Group deliverables hold: web, video, text

Thank you!

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