Feedback on Hello World Demos and Preparing for ForskarFredag - Lecture 8

Mario Romero
2016/09/20
AGI16 Calendar: link

- Tue 30 aug 13:00-15:00
- Fri 2 sep 8:00 – 12:00
- Tue 6 sep 13:00 – 15:00
- Fri 9 sep 8:00 – 10:00
- Tue 13 sep 13:00 – 15:00
- Fri 16 sep 10:00-12:00
- **Tue 20 sep 13:00 – 15:00**
- Fri 27 sep 13:00 – 17:00
- **Fri 30 sep 8:00 – 16:00**
- Tue 4 oct 13:00 – 15:00
- Tue 11 oct 13:00 – 15:00
- Tue 1 nov 13:00 – 15:00
- **Fri 4 nov 9:00 – Sun 6 Nov 16:00**
- Tue 15 nov 13:00 – 15:00
- Fri 18 nov 8:00-12:00
- Tue 22 nov 13:00-15:00
- Tue 29 nov 13:00-15:00
- Tue 6 dec 13:00-15:00
- Tue 13 dec 13:00-15:00
- **Fri 16 dec 15:00-19:00**

Lecture 1: Introduction
Lecture 2-3: Forming Groups and Brainstorming
Lecture 4: Groups formed, inspiration, and brainstorming
Lecture 5: Proposals
Lecture 6: Proposal Feedback
Lecture 7: Hello World Demos
Lecture 8: Preparing ForskarFredag 2016
Lecture 9: Demo and preparation towards ForskarFredag

ForskarFredag (we set up on Thursday evening)
Lecture 10: Reflecting on ForskarFredag
Lecture 11: Preparing for Comic Con
Lecture 12: Preparing for Comic Con

Comic Con (we set up on Thursday evening)
Lecture 13: Forming groups for project 2
Lecture 14-15: Proposals Project 2
Lecture 16: Hello World Demo Project 2
Lecture 17: Feedback on Demos
Lecture 18: Preparing for Open House
Lecture 19: Demo project 2

VIC AGI16 Open House
1. Feedback
   1. Hoverbroom
   2. Pockemon Don't Go
   3. TowPow
   4. Chosen Ones
   5. Zield
   6. SounDark
   7. CocAR
   8. Have Mercy
   9. URGOD
   10. Pointy Stick

2. User study announcement
3. Preparing ForskarFredag
4. Demos next Tuesday
5. Assignment 3
6. Grades so far
7. Individual meetings if needed
Hello World Demo
Feedback Hoverbroom

• The positive
  – Skilled interaction is working
  – Game mechanics are interesting

• The challenge
  – Beginner’s interaction
    • Pitch and Yaw are dampened
  – Graphics
  – FX
  – Sound
  – Super user interaction
    • Rolls
    • Movement vs. Gaze
Proposal for “Pokemon DON’T-GO”

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Advanced Graphics and Interaction
AGI16
2016/09/09
Hello World Demo
Feedback PDG

• The positive
  – Environment on its way

• The challenge
  – HW
    • sensor tags
  – Plans B and C
  – Don’t use copyrighted material
  – Build your own models and animations
  – Physical setup
Proposal for TowPow

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Advanced Graphics and Interaction
AGI16
2016/09/09
The positive
- Vive is working
- Pixelsense receives input
- Some game mechanics
- Picking up and shooting nice

The challenge
- Use two controllers
  * Bow and arrow
  * Shield and sword
  * Rifle?
- Graphics
- Pixelsense output
Proposal for The Chosen Ones

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Advanced Graphics and Interaction
AGI16
2016/09/09
Hello World Demo
Feedback The Chosen Ones

• The positive
  – Vive working
  – Kinect mostly working!
  – Bullets in the air

• The challenge
  – Kinect body stable
    • Can you use Vive to anchor hands
  – Balance game
  – Explore speed
  – Graphics
Hello World Demo

Feedback Zield

- The positive
  - HTC working
- The challenge
  - UX
  - Game play
  - Graphics
  - goal
Proposal for SOUNDark

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Advanced Graphics and Interaction
AGI16
2016/09/09
• The positive
  – Oculus working
  – Sound working
  – Shader working
  – Procedural maze working

• The challenge
  – Sound filtering
  – Intentional sound design
  – Gameplay
  – Graphics
  – Balance
  – View for audience
  – Design audience participation
Hello World Demo
Feedback CocAR

• The positive
  – Pixel sense working
  – Controller working

• The challenge
  – VR?
  – Physics
  – Graphics
  – FX
  – Game play
  – Balance
  – 3D print and fiducials
Proposal for Have Mercy

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Advanced Graphics and Interaction  
AGI16  
2016/09/09
Hello World Demo

Feedback Have Mercy

• The positive
  – Environment set up
  – Phone sort of working

• The challenge
  – VR?
  – Connectivity
  – Game play
  – Balance
  – Abilities
  – Graphics
  – FX
Proposal for You are God

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Advanced Graphics and Interaction
AGI16
2016/09/09
Hello World Demo
Feedback You are God

- The positive
  - Vive working very well
  - Physics
  - AI

- The challenge
  - Graphics
  - FX
  - Gameplay
  - Goal
  - Balance
Proposal for Pointy Stick

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Advanced Graphics and Interaction
AGI16
2016-09-09
• The positive
  – Environment started

• The challenge
  – Controller
  – VR?
  – Gestures
    • Definition
    • Recognition
Study in Augmented Reality Analysis for Automotive Engineering

**Event for AGI16 · Hosted by Mario Romero**

**October 24 – October 28**
Oct 24 at 9 AM to Oct 28 at 7 PM

**Visualization Studio VIC**
Level 4, room 4451, Lindstedtsvägen 5, 114 28 Stockholm, Sweden

Terese Nothnagel, Mario’s master student, is working with Volvo research to create an augmented reality analysis tool for automotive engineering. She has developed a first-person 3D visualization of the Volvo XC-90 going through a simulated fluid. The engineering task is to determine contamination events, moments in which the mud strikes the engine and the distribution belt. We are recruiting 3 to 5 participants for a pilot and 20 participants for the one-hour study during the third and fourth weeks of October. For the first 25 people to sign up, we will award credit equivalent for one assignment, that is you replace one of the AGI16 assignments with participation in the study. Participation will take 60 minutes. Please ask Terese any questions.
We are on the 3rd floor stage

Setup
Thursday Sept 29
15:00 (@ VIC) – 20:00 (@ location)

Present
Friday Sept 30
8:00 (@ location) – 16:00 (@ location)

Return
Friday Sept 30
16:00 (@ location) – 18:00 (@ VIC)

Mario’s mobile
0762581802
Medborgarplatsen Invasion for ForskarFredag

Event for AGI16 - Hosted by Mario Romero

Thursday, September 29 at 3 PM - 8 PM
Next Week - 7-16° Rain Showers

Medborgarplatsen, SE-118 25 Stockholm, Sverige

We set up all the demos for our wonderful projects to wow the high school students and teachers attending ForskarFredag. All groups must have at least two representatives who handle the installation.

Alan, Adrian and 17 other friends are going

40 going 0 maybe 22 invited
Debaser 3rd floor stage
Debaser 3rd floor stage
ForskarFredag 2012
ForskarFredag 2014
ForskarFredag 2014
ForskarFredag 2014
ForskarFredag 2015
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2016/09/20
AGI16 - L8
Debaser 3rd floor stage
**TIME:**
9:00 - 11:30
12:00 - 14:30

**Todos:**
- Soundary, OC CVI
- GOCA, PC, GL2
- Field VR
- GCAS VITE + K ►
- Pointy Stick
- VIVE

**Manpower:**
- Hoverbroom
- Pockemon
- Don't Go
- TowPow
- Chosen Ones
- Zield
- SoundDark
- FUNCARE
- Have Mercy
- URGOD
- Pointy Stick

**Comp 2**
- TowEQ
- Screens

**Equipment:**
- VIVE
- OCU
- Wii
- Xbox
- Sony
- Tags
- Tables
- Chairs
- Boards

**Questions:**
- Ask GRU 4 Sek?
Debaser 3rd floor stage
Next Tuesday
Demo Rehearsal up for ForskarFredag
Demo: Purpose

Practice for ForskarFredag
Demonstrate state of projects
Interact with each other’s projects
Discuss
Improve
BUT...

Train to:
- Present in 60 seconds to six-year-olds
- Observe and gather formative evaluation quantitative and qualitative data in the field
- Ellicit constructive criticism
Demo: Structure

• Interactive Demo
  08:00
  – Hands-on
  – Non team members
  – Discussion going on

• Context Switch
  01:00
Demo: Roles

• At least:
  – One presenter
    • Present script only
    • Answer questions
  – One observer
    • Take notes
    • DO NOT TALK
  – One inquirer
    • Ask clarifying questions
    • Do not ask leading questions
Demo: Presentation on Poster

- One slide
- 2, 3 or 4 columns
  - Motivation and Goals
  - Methods
  - Results
- Few words many images
- Link to how to do and present posters
Multi-Flash 3D Photography: Capturing the Shape and Appearance of 3D Objects

A new approach for reconstructing 3D objects using shadows cast by depth discontinuities, as detected by a multi-flash camera. Unlike existing stereo vision algorithms, this method works even with plain surfaces, including unpainted ceramics and architecture.

Data Capture: A turntable and a digital camera are used to acquire data from 670 viewpoints. For each viewpoint, we capture a set of images using illumination from four different flashes. Future embodiments will include a small, inexpensive handheld multi-flash camera.

Recovering a Smooth Surface

The reconstructed point cloud can possess errors, including gaps and noise. To minimize these effects, we find an implicit surface which interpolates the 3D points. This method can be applied to any 3D point cloud, including those generated by laser scanners.

Photometric Reconstruction

Using the implicit surface, we can determine which points are visible from each viewpoint. To model the material properties of the surface, we fit a per-point Phong BRDF model to the set of visible reflectance observations (using a total of 67 viewpoints).

$$I_\lambda = k_{a\lambda} + k_{d\lambda} n \cdot I + k_{s\lambda} (r \cdot v)^n$$

Ambient Diffuse Specular

Multi-Flash Turntable Sequence Images Phong (Specular)

3D Point Cloud Implicit Surface Phong (Diffuse) Estimated Phong Appearance Model
Introduction

Voice is one of the most natural means of expression, we always underestimate our vocal rhythmic game interface, and if we use this rhythmic potential to a bright game, incorporating visual interaction technique, Celestia vocal voice input based on pitch detection as a primary controller, and provides insight into innovation of vocal interaction.

Game Play

The purpose is to guide a newborn star through the universe with melody. The user's voice can enlarge the star to absorb smaller planets and survive encounters with comets. The more often the experiential aesthetic is tied to the background music. The collision is the music visualization with three different colors ranging from high, mid, and bass range of the soundtracks in real-time.

Design

The initial idea came to us as a scenario of someone playing a game using only their voice. This is combined with the immersive Celestial environment which merges visual and vocal elements seamlessly.

We started with the story, a newborn star wants to grow. However, comets and nebulae might hurt it in its journey. Fortunately, users' voice can help it gain more power by absorbing smaller planets.

Approach

By using Fast Fourier Transformation algorithm and voice spectrum analysis, we precisely selected 3 pitches as controllers, because they are in the best detection range and size in perfect harmony with background music. The whole experience of playing Celestia can be singing a song by connecting those notes in chord as game progresses. We also adopted two different pitch ranges to accommodate both female and male voices.

Future Work

We introduced Celestia to a vocalist to improve the game for a live audience. Turned out to be a great success, people think "it's visually and aurally appealing". Celestia is not confined to human voice, users can play instruments, such as guitar, harmonica or violin parts.

We will keep exploring more possibilities of Celestia, iOS version will be out soon...
Introduction
Planetary Defence is an online 3D graphics multiplayer game. You shoot rockets at your opponents and you can shoot your opponents’ rockets down.

Motivation
- Build lightweight socializing
- Learn new technologies
- Design Entertainment

Goals
- Multiplayer
- Multiplatform
- High resolution
- 3D game
- On the web

Technology
- WebGL
- Web sockets
- HTML5
- Three.js

Interaction
- Swipe / click and drag
- Tap / click

Conclusions
- Real-time 3D graphics
- Multiplayer interaction
- Online
- No downloading!

References
1. Three.js https://github.com/mrdobbs/three.js

bit.ly/QwaRhz
• Clarifying questions:
  – What do you mean by “so and so”?  
  – I don’t understand, could you explain it differently?  
  – Could you talk about that further?  
  – Tell more about that...  
  – How does that make you feel?  
  – ”Following” questions
• Leading questions:
  – What do you think?
  – Is it working for you?
  – **Do you like it?**
  – What would you improve?
  – What would you change?
  – Why don’t you like it?
  – Why do you like it?
Observers

- Pen and pad
- Take copious notes
- Count, count, count!
- Take photos
- Record (VERY SHORT) videos – be selective
- Record (VERY SHORT) testimonials
Remember: Deliverable

- Working VIC Demo
- Code with good comments
- Webpage with:
  - Description
    - Goal and motivation of the project
    - Explanation and Justification of the graphics and interaction technologies used and developed
    - Challenges
    - Obstacles
    - Related work
    - Lessons learned
  - Photos
  - "Making of" documentary (2 minutes)
  - Demo Reel (30 seconds)
  - Optional PR material (logo, trailer, flyers, posters, catalog)
  - User testimonials (what did people say)
Demo: Audience

- Take notes
- Comment during demo
- Take notes of comments
- Transfer your notes to the facebook wall
- Help each other
Grading of ForskarFredag

- 10%
- Group
  - 9:00 – 16:00 (- 1% per hour missed)
- Individual component – **KTH social**
  - Answer the survey which will be posted on Friday, September 26 at 17:00 before Sunday September 28 before 23:55. It is very important that you answer it as soon as possible after ForskarFredag is over.
ForskarFredag Survey

- What did you learn presenting, observing, interacting?
- What were the most common questions?
- What were the challenges?
- What were the rewards?
- A few technical questions.
Communication

- Poster feedback
- Printing (Tuesday morning)
- Other communication materials
  - Web page
  - Flyers
  - Logo
  - Slogan
  - ...

2016/09/20
Ind. Meeting if needed
Assignment 3

• Due Tuesday October 4 at 10 AM
• Everyone
• Share the papers with each other on a google doc spread sheet
• Invite me to the document
• Group the papers into themes
• Prioritize the papers per theme
  – Everyone Votes scores 3 (best) to 1.
• The top 12 papers is your reading list for the following 4 assignments
• I will suggest follow up readings per theme
Individual Grades

- I will create a google doc
- Alias to everyone
- Place individual results there
Questions?