



GDC EDUCATION
SUMMIT

Teaching Virtual Reality Game Development

Robin Hunicke
Dennis Ramirez
Jichen Zhu
Ira Fay
Jesse Schell

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Teaching Virtual Reality Game Development

Robin Hunicke

Associate Professor of Art, UC Santa Cruz
Co-founder, Funomena

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VR & AR

Design Thinking

@UC Santa

Cruz









Mechanics

→ Match Suit
or number

→ First one w/ no
Cards wins

"Crazy 8's"
Dynamics

→ Pattern matching
→ competition

Aesthetics

Mini-Architect



SIMS

Buy
Get up / use stuff
Do life stuff

Go work (happy)
Get promo

\$\$

Do quests for reward

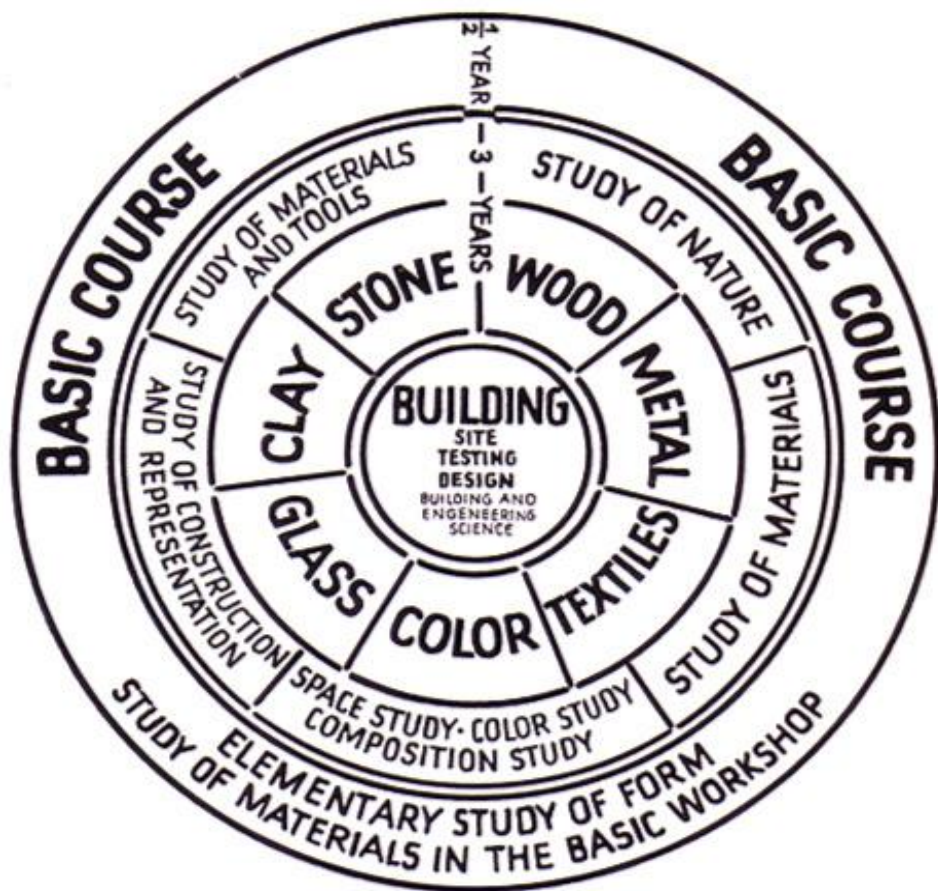
Search
build
give

Epic Story of
romance
discovery

Link
GW

My Sims

OUT ANY TIME









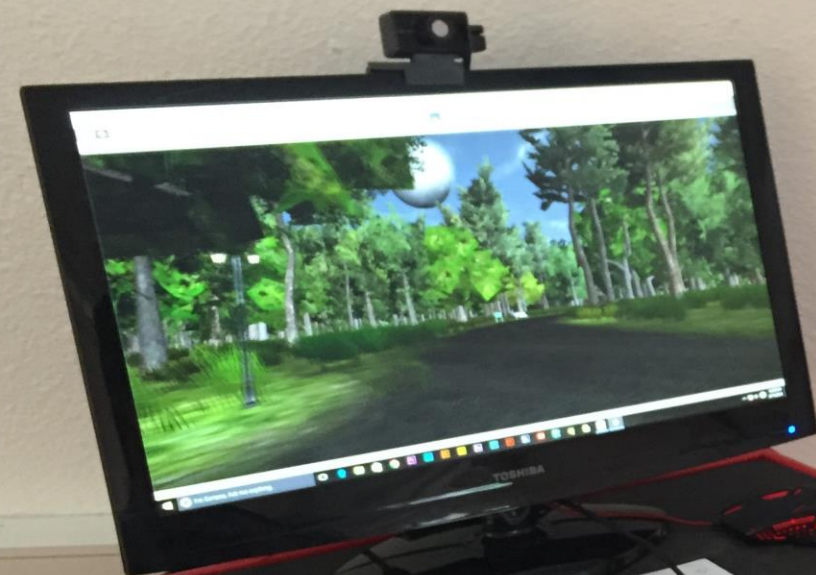
Equipment is
expensive and
time consuming

You are aiming
for a moving
target w/r/t
performance...

Design
constraints are
always imposed
best early, often

You miss 100%
of the shots you
don't take!





Time

Time Testing

Time

Testing

&

Trying Again :D

Support

Support Relationship

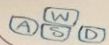
Support
Relationship
Community

Support
Relationship
Community
Space

Oculus

Welcome to the demo for
visions

press the play button to start
the experience. This will be the
only time you use the mouse.



Use the keyboard to move around.

① Affix the **@culus** to your head,
put on the **@eadphones** or connect
your own **@arphones** and enjoy!

Visions is about exploring a world
that isn't all there. Utilizing some
well-known perceptual phenomena, it
questions how much of reality is
made unreal through our perception
of it. Is what you see real?



Ludo LAB





GDC EDUCATION
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Dennis Ramirez

Technical Director, USC IMGD

@dennisramirez

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USC School of Cinematic Arts

Interactive Media & Games Division



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UBM

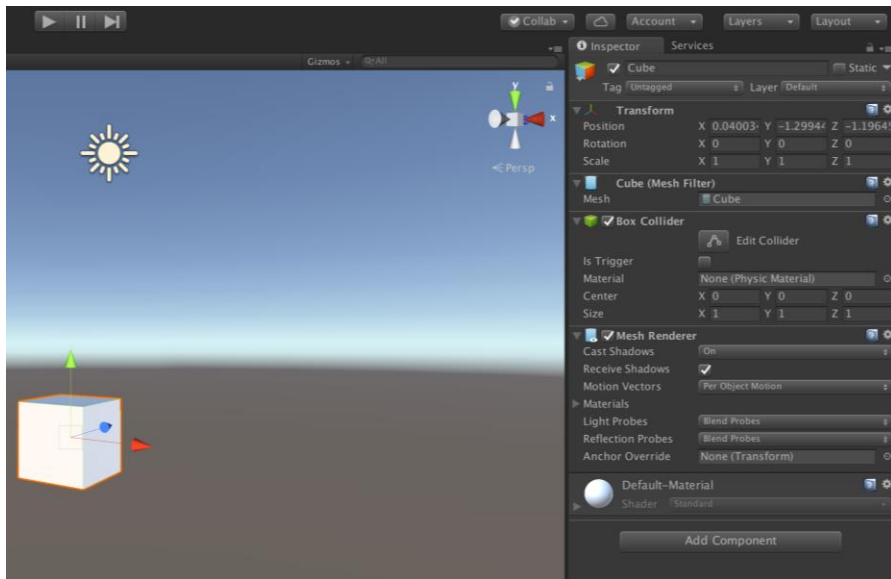


Get Students on Devices Quickly





Get Students on Devices Quickly





Get Students on Devices Quickly

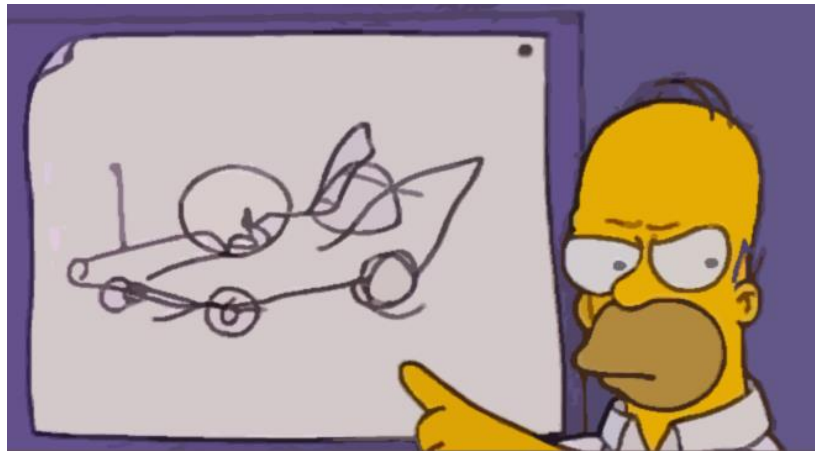
Gets students to start
“thinking in VR.”





Get Students on Devices Quickly

Avoids problems
associated with editor
only development.





Respect the players!





Respect the players!

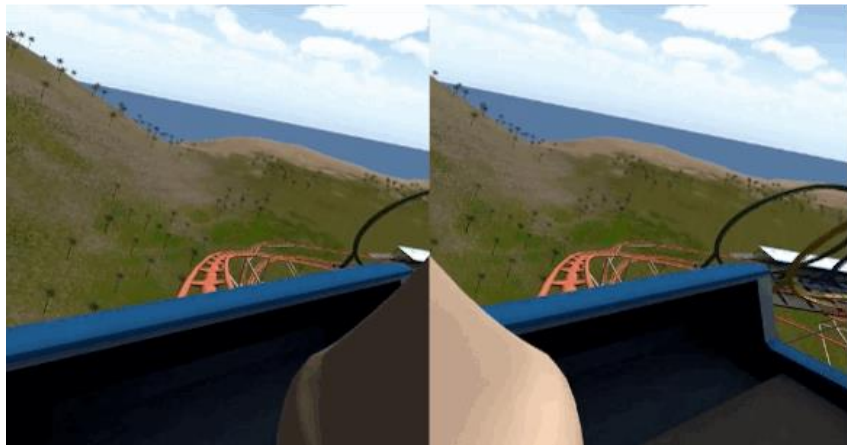
The transition into VR
is still jarring.





Respect the players!

You don't want users throwing up in a playtest.



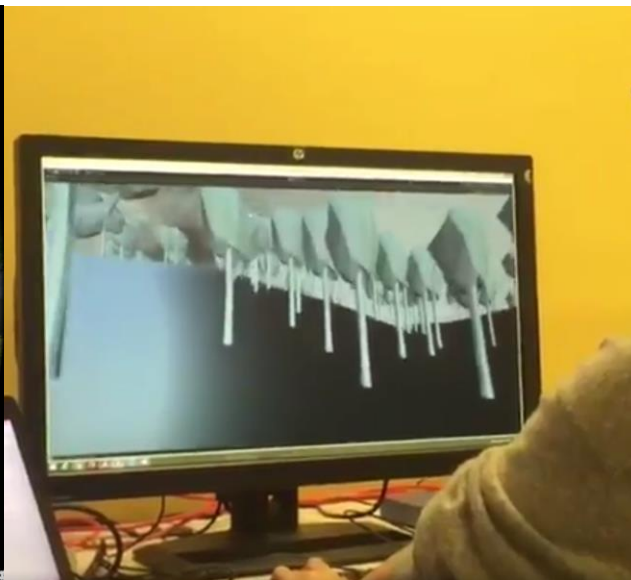


Set Up Teachable Moments





Set Up Teachable Moments





Set Up Teachable Moments

Productive Failure

- Have students attempt a challenge.
- Provide relevant info, answer questions.
- Have the students try again.



Tips For Teaching VR Game Dev

- Get students on devices quickly.
- Respect the players.
- Set up teachable moments.



Thank you!

Dennis Ramirez
@dennisramirez





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Jichen Zhu

Associate Professor of Digital Media,
Drexel University

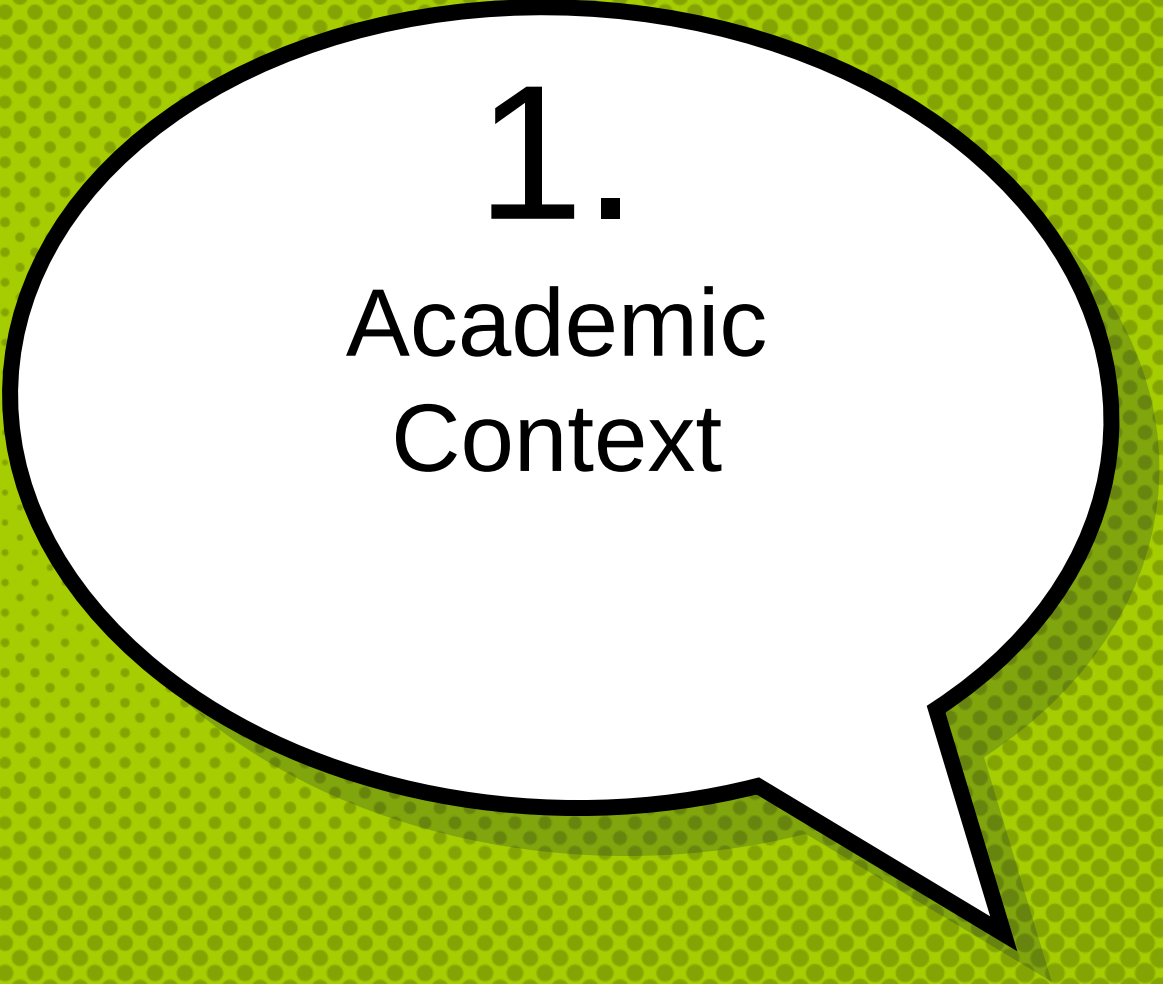
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Teaching
VR/AR
Game Dev
@Drexel



1.

Academic
Context

Academic Programs

- × B.S. in
 - × Game Design and Production
 - × Animation and Visual Effects
 - × Interactive Digital Media
 - × Immersive Media (Minor)
- × M.S. in Digital Media
- × Ph.D. in Digital Media



Westphal College of Media Arts & Design

Student-Led Learning

- × Drexel University Virtual Reality (DUVR) club
- × Drexel SIGGRAPH Group



Facilities / Equipment



Facilities / Equipment



Animation Capture & Effects (ACE)
Lab



360° camera system. Prof. Jushchyshyn



2.

VR Game Dev

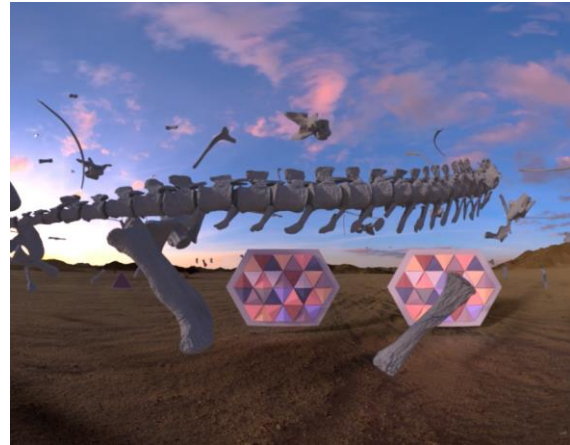


Gaming
+
Animation
+
Web / UX

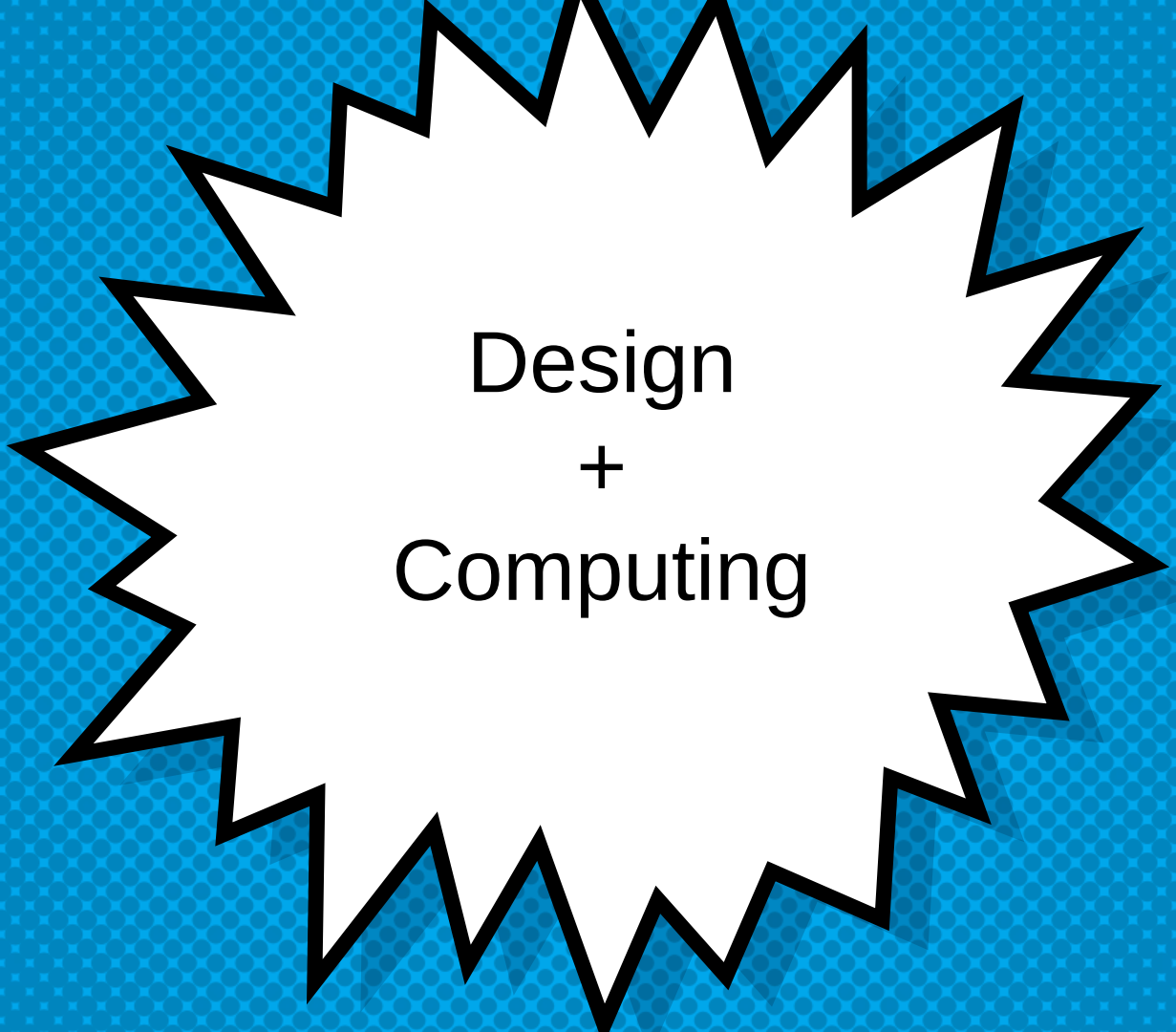
M.S. thesis projects



Chester Cunanan, chesterc.net



Valentina Feldman, valfx.net



Design
+
Computing

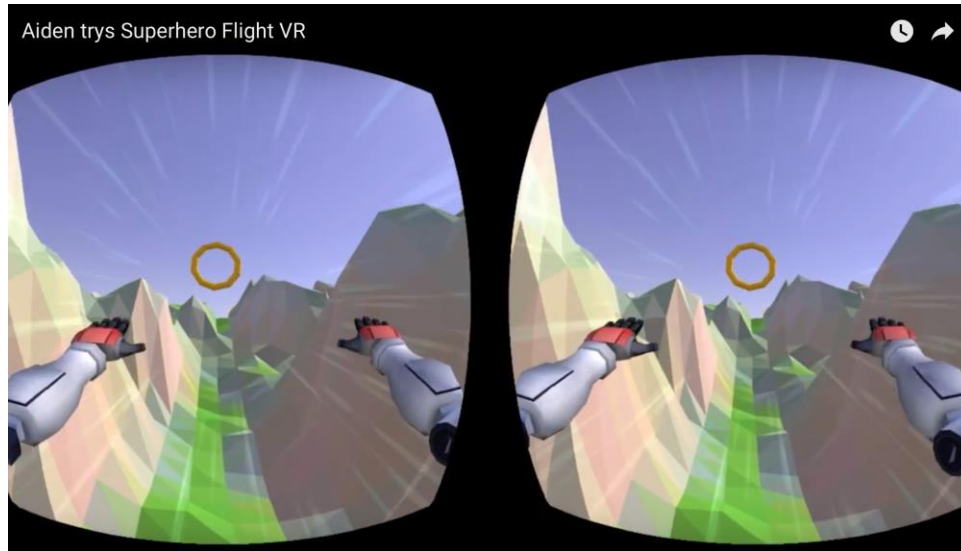
Senior Capstone Projects (DIGM & CS)



Knowledge We Seek
Polyscape Games

Student-led
Projects

Student-Driven Projects



Brendan Luu



3. Challenges

I. Hardware / Space Accessibility



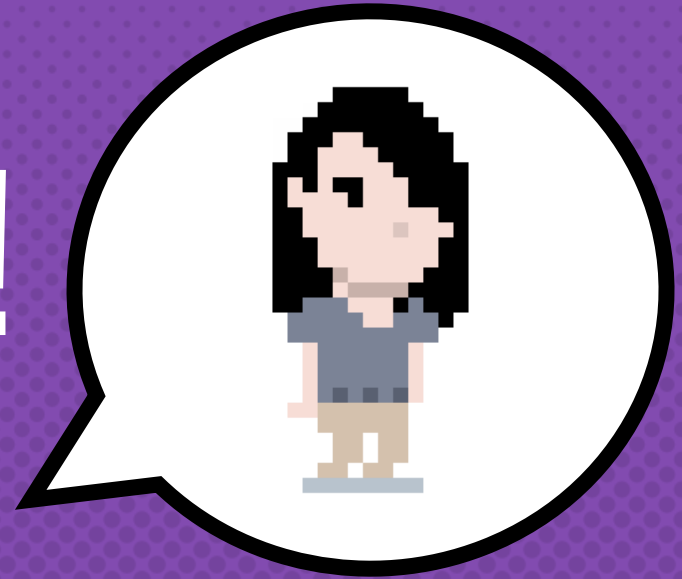
II. Designated Courses and Visible Structures



III. Getting Over the Hype



THANKS!



@jichenz

Jichen.zhu@gmail.com

Special Thanks:

Valentina Feldman, Troy Finamore, John Gall, Nick Jushchyshyn,
Brendan Luu, All Drexel Digital Media faculty



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Ira Fay

Assistant Professor of Computer Science
and Game Design, Hampshire College
CEO, Fay Games

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FAY GAMES

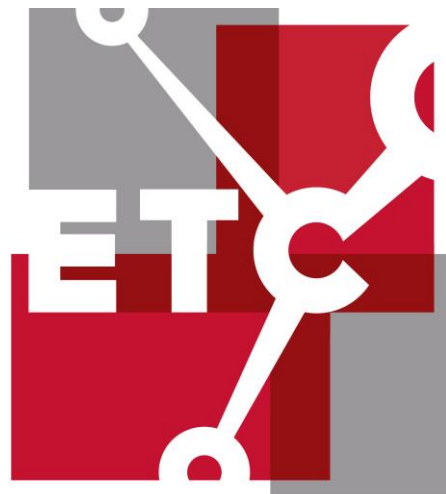


Carnegie Mellon University
Heinz College

ACTIVISION



Disney



Carnegie Mellon University



H A M P S H I R E
C O L L E G E



Hampshire College

- ~1300 undergrad
- More women than men
- No grades, no majors
- Top 10 in game design by Princeton Review
(but their methodology is questionable)





Undergraduate Courses

- 5-12 person teams
- 4-15 week projects
- Student pitched vs. Faculty directed



Playtesting in the Library Game Lab



Learning Goals

Students develop their skills in:





Learning Goals

Students develop their skills in:

- Teamwork





Learning Goals

Students develop their skills in:

- Teamwork
- Communication





Learning Goals

Students develop their skills in:

- Teamwork
- Communication
- Giving and receiving feedback





Learning Goals

Students develop their skills in:

- Teamwork
- Communication
- Giving and receiving feedback
- Resourcefulness





Learning Goals

Students develop their skills in:

- Teamwork
- Communication
- Giving and receiving feedback
- Resourcefulness
- Programming/Art/Audio/Design





Learning Goals

Students develop their skills in:

- Teamwork
- Communication
- Giving and receiving feedback
- Resourcefulness
- Programming/Art/Audio/Design
- Using industry standard tools





VR Challenges





VR Challenges

Game Design in an Unfamiliar Medium





VR Challenges

Game Design in an Unfamiliar Medium
Limited Hardware Availability





Design Challenges





Design Challenges

- Unfamiliar medium





Design Challenges

- Unfamiliar medium
 - Leverage peer knowledge





Design Challenges

- Unfamiliar medium
 - Leverage peer knowledge
- Difficult to scope correctly





Limited Hardware





Yearly Non-Labor Expenses

\$0 – \$2500 = Easy

\$2500 – \$5000 = Medium

\$5000+ = Hard





Limited Hardware





Limited Hardware

- Get students into the hardware fast





Limited Hardware

- Get students into the hardware fast
- Provide shared physical space (library!)





Limited Hardware

- Get students into the hardware fast
- Provide shared physical space (library!)
- Facilitate teamwork (e.g. lab times)





Limited Hardware

- Get students into the hardware fast
- Provide shared physical space (library!)
- Facilitate teamwork (e.g. lab times)
- Game designers travel to the device





Unfamiliar Medium

- Follow best practices
- Use peer knowledge
- Scope properly

Limited Hardware

- Establish pipeline
- Shared space
- Facilitate teamwork
- Designers travel





Thank you!

<http://irafay.com>
ifay@hampshire.edu



VR will be really old
technology for them





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Jesse Schell

CEO, Schell Games

Distinguished Professor of Entertainment
Technology, Carnegie Mellon University

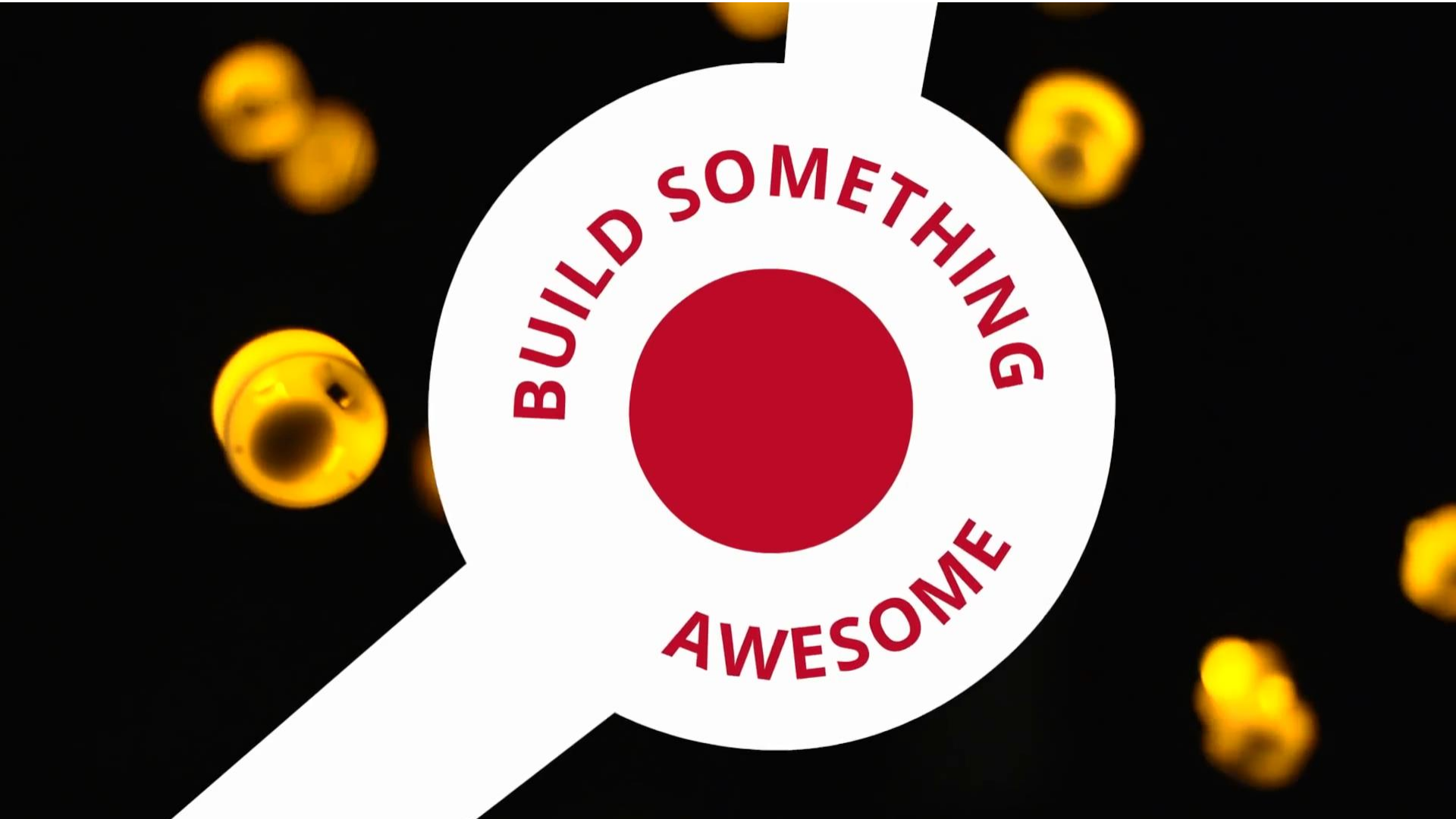
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Building Virtual Worlds

Jesse Schell



**BUILD SOMETHING
AWESOME**

The Goal: Teamwork



The Platforms: Futuristic



The Timelines: Short



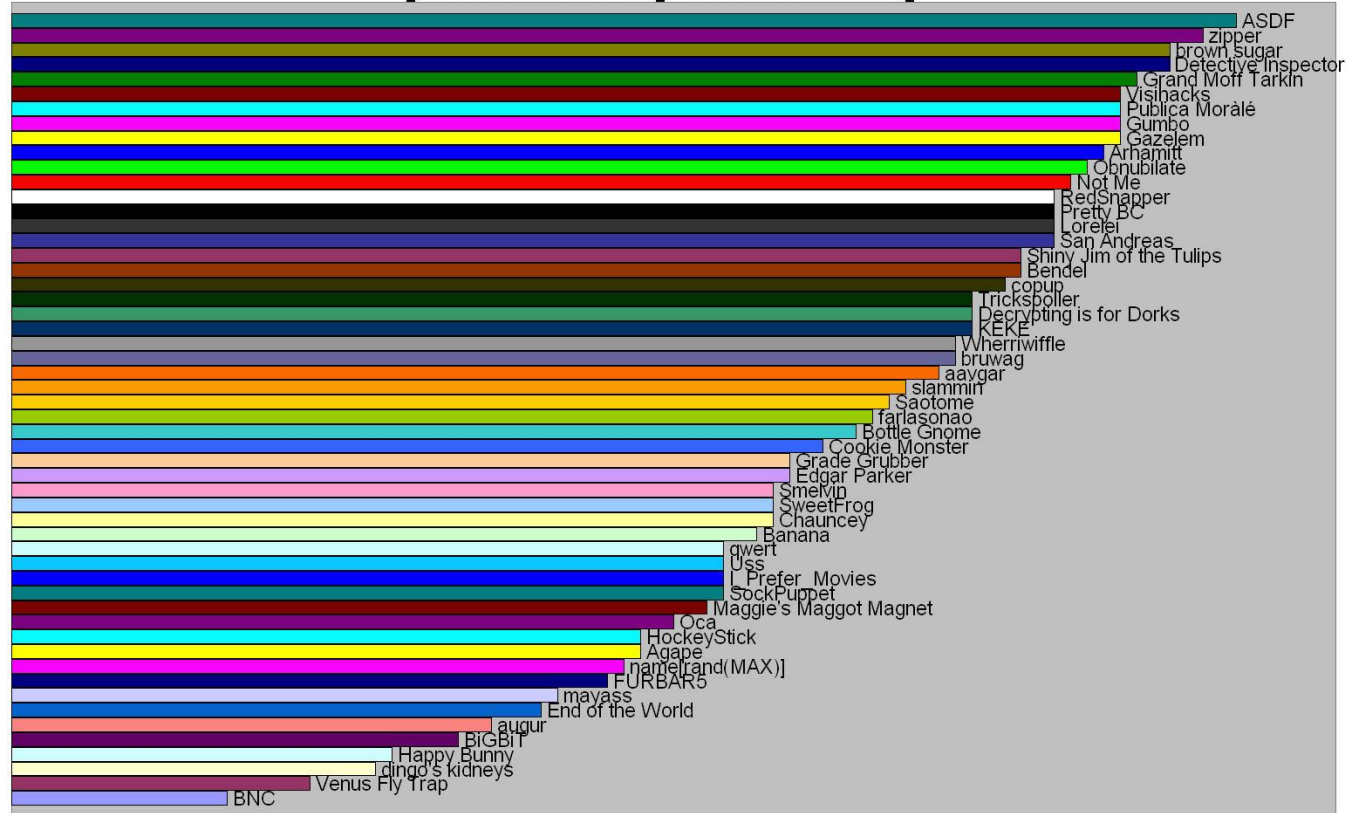
**KEEP
CALM
ONLY
2 WEEKS
LEFT**

The TA's: Numerous



The Feedback: Plentiful

Easy to Work With (longer bars are better)



The Motivation: Intense

