

CSE 165: 3D User Interaction

Lecture #5:
Image Plane Techniques

Announcements

- Wednesday, January 20th at 2pm:
 - Discussion 2
 - Will be recorded and available on Canvas
- Sunday, January 24th at 11:59pm:
 - Homework Project 1 due
- Sunday, January 31st at 11:59pm:
 - Late deadline for project 1
- Sunday, February 7th at 11:59pm:
 - Homework project 2 due

3D UI Presentations

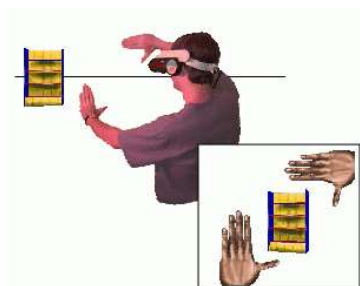
- Maria Kalyuzhny
 - What can Tilt Brush Do?
- Nicholas Mak
 - DecaGear FaceFlow
- Jeremy Phan Nguyen
 - MAGES 3.0: Tying the knot of medical VR

Image Plane Techniques

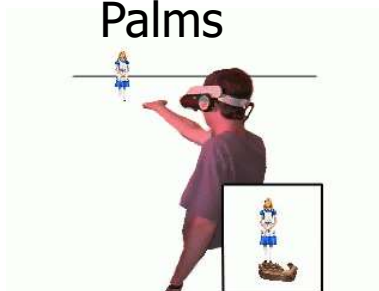
- Require only 2 DOF
 - Selection based on 2D projections
 - Use virtual image plane in front of user
 - Dependent on head/eye position



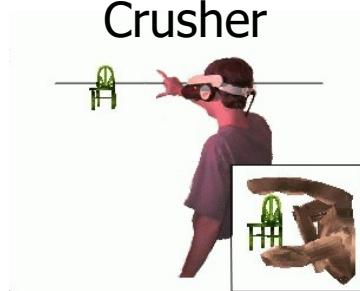
Framing



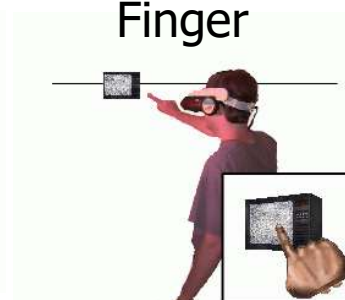
Lifting
Palms



Head-
Crusher



Sticky
Finger



Forced Perspective

- Used in game Superliminal
 - Released Dec 2019
 - Tech demo video:



Development steps for new interaction concept

- Example:
Summoning and Superpowers: Designing VR Interactions at a Distance
- <http://blog.leapmotion.com/summoning-superpowers-designing-vr-interactions-distance/>

Technique Classification by Metaphor

- Manipulation techniques
 - Egocentric metaphor
 - Virtual pointer metaphor
 - Ray-casting
 - Two-handed pointing
 - Flashlight
 - Image plane
 - Forced Perspective
 - Direct manipulation
 - "Classical" virtual hand
 - Go-Go
 - Exocentric metaphor
 - World-in-miniature
 - Hybrid techniques
 - Voodoo Dolls

