CSE 190: Virtual Reality Technologies

LECTURE #13: MULTI-USER VR SYSTEMS

Announcements

Final Project on-line

- Due June 12th at 3pm
- Videos 3-4pm
- Presentations 4-6pm

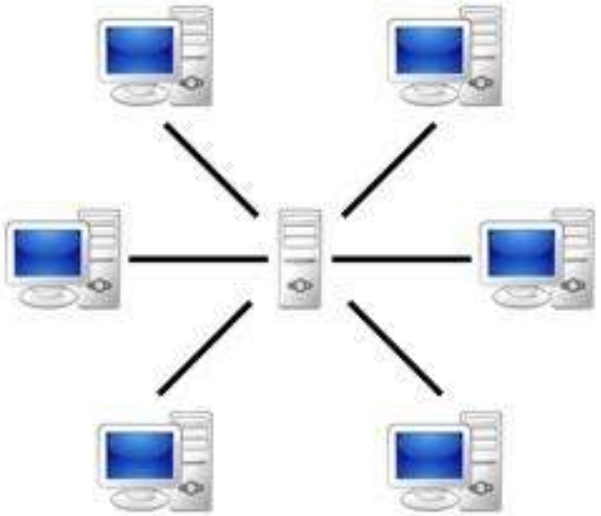
Two blog updates needed

- Deadlines are next two Sunday late nights

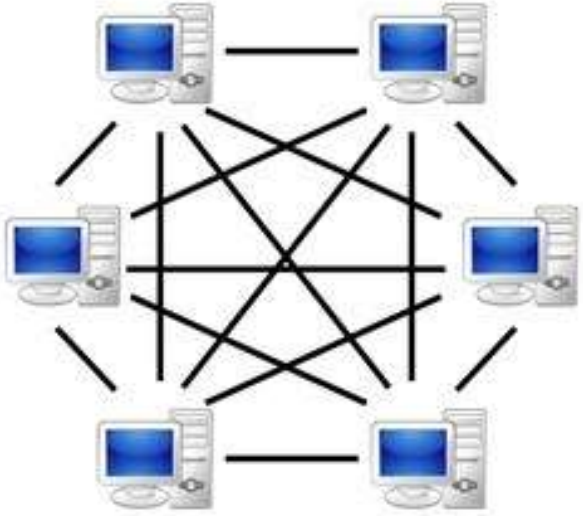
Midterms to be returned Thursday

Multi-User VR Systems

Network Architecture



Server-based



P2P-network

Network Architectures

SERVER-BASED = CLIENT/SERVER	PEER-TO-PEER (P2P)
Server has control ability while clients don't	All computers have equal ability
Used in small and large networks	Normally used in small networks with <10 computers
Higher cabling cost	Lower cabling cost
Easy to manage	Hard to manage: no central point
Different software for server and clients with different capabilities	Same software needs to be installed on every computer
One powerful computer acting as server	No server needed

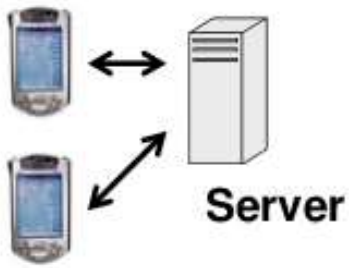
Client-Server Communication

CLIENT-SERVER COMPUTING

Client initiates communications

Client issues request to a server

Server replies or performs some service



PEER-TO-PEER COMPUTING

Any participant can initiate communication

Any device can generate a request

Any device may provide a response

Multi-User Scenarios

Presentation

- One presenter, many viewers
- Presenter may or may not see viewers
- Viewers may or may not see each other

Spectator VR

- One or more players/users/actors, many observers
- Actors likely don’t see observers
- Observers don’t see each other

Collaboration

- Multiple equally privileged players/users
- Everybody sees everybody

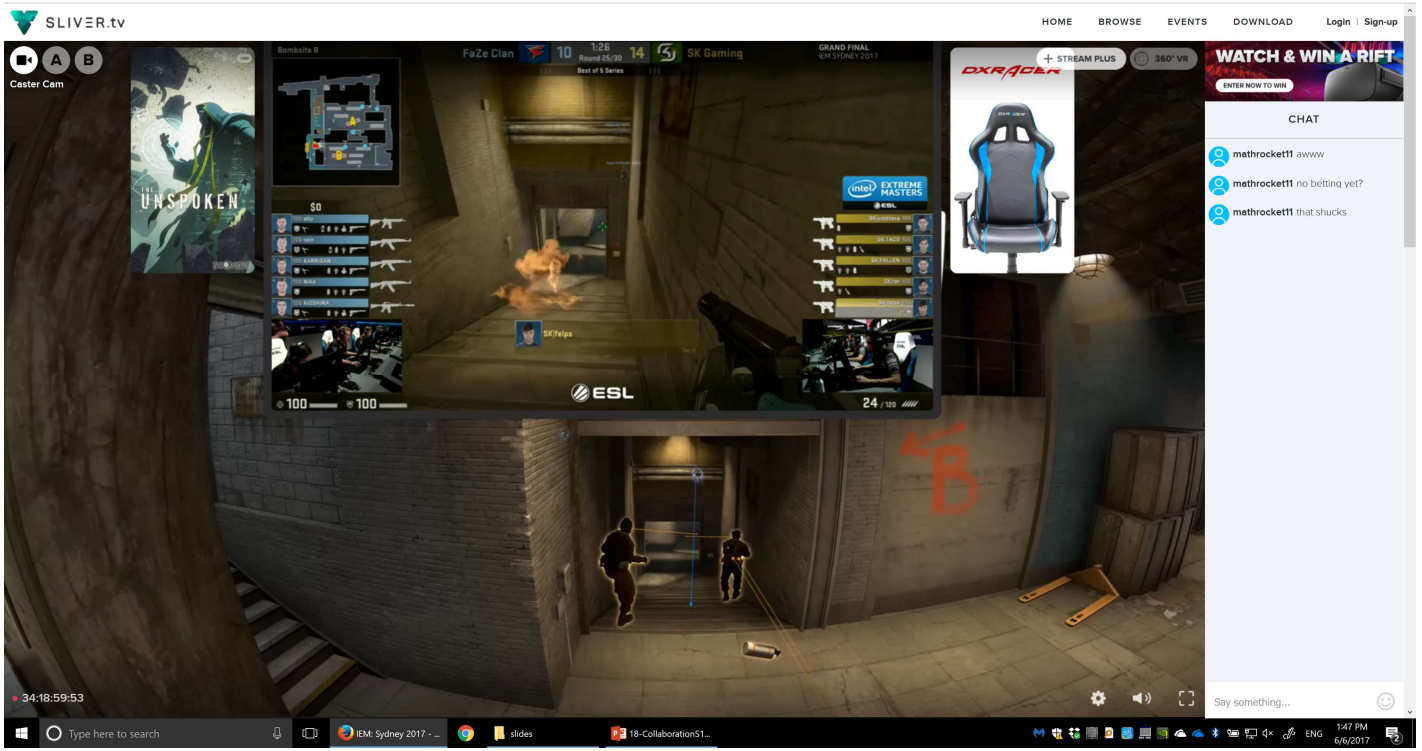
Altspace VR

Multi-user mode: Presentation, Collaboration

SLIVER.TV

https://www.sliver.tv/

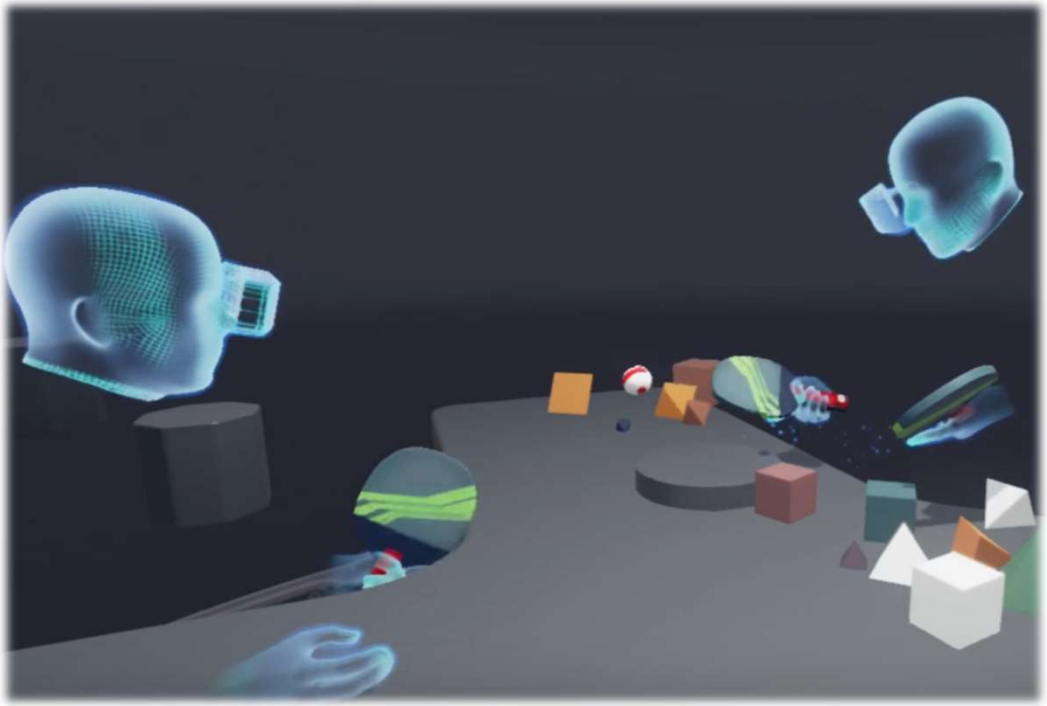
Multi-user mode: Spectator VR



Oculus Toy Box

https://www.youtube.com/watch?v=iFEMiyGMa58

Multi-user mode: collaboration



Facebook Spaces

https://www.youtube.com/watch?v=PVf3m7e7OKU

Multi-user mode: collaboration