VIRTUAL REALITY @ BERKELEY

PROJECT ROSTER
FALL 2016

Immersive Semi-Autonomous Aerial Command System

FALL & SPRING

Explore and envision new ways for human users to intuitively interface and collaborate with aerial drones around augmented reality (AR) technologies.

TEAM LEAD

Kevin Yin

ABOUT THE PROJECT

ISAACS is an open-source project to envision new ways for human users to intuitively interface and collaborate with aerial drones through augmented reality (AR) technologies. This project represents a new vision for a human-robot interface (HRI). The team will work on a HRI via AR: a new 3D, contextualized robot interface that allows operators to control and command a drone fleet directly from the HoloLens. Ultimately, it can provide a seamless and intuitive extension to human operators' perception, enabling them to control a fleet of aerial vehicles in complex environments.

HoloLens

TEAM ROLES

Software Developer:
Responsible for improving the existing prototype, integrating the front end unity application with the backend ROS server and drone. Qualifications: Experience with Unity (preferred), ROS, networking.

3D Artists
Responsible for creating the assets that will be utilized in the interface.
Qualification: Maya or equivalent

Unity Developer
Reponsible for building the interface and interactions in Unity.

UX Designer
Responsible for performing design user study to provide guidance for user interface development.

OpenARK (Augmented Reality Kit)

FALL & SPRING

Creating fluid interface between humans and holograms

TEAM LEAD

Bill Zhou

ABOUT THE PROJECT

This project is an open-ended research project with a goal to create the first open source augmented reality development toolkit that can enable human computer interaction in 3D space on any AR platform. It integrates depth sensors, RGB camera, and transparent display glasses in a head-mounted platform to prototype the collection and display of information within an augmented reality system. Think of it as recreated Iron Man.TL;DR: Make Iron Man

TRANSPARENT DISPLAY GLASSES

TEAM ROLES

Computer Vision Researcher
Using RGB-D point cloud information to create or improve various features in an AR glasses. Qualification: C++

UX Designer
Responsible for providing design user study to provide guidance for creating the human computer interface

AR Applications in Medicine

FALL & SPRING

Capturing, streaming and rendering data in an AR context

TEAM LEAD

Will Huang

ABOUT THE PROJECT

My team is working with the Berkeley Augmented Telemedicine group. We're building a system to assist medical field workers such as paramedics to be able to communicate with medical professionals in a accurate, intuitive manner using augmented reality. We will be working on rendering dynamic point cloud data using a Z Space and possibly on streaming and capturing this data. This involves concepts in computer graphics and computer vision.

Medical VR Concept Art

TEAM ROLES

Members of the team will work on taking in streamed point cloud data and generating the appropriate mesh in C++, then rendering it in Unity. Members will also work on implementing input to the Z Space and displaying this input accurately as the mesh

UI/UX Designers
Explore a new field by creating UI for virtual reality platforms. Previous design experience highly preferred.

OpenGL Developer
Work on rendering MRI data and the challenges of being able to efficiently view data using OpenGL. Put your graphics and linear algebra knowledge to use!

Augmented Textbooks w/ Cardboard

FALL & SPRING

TEAM LEADS

Tom Cheng
James Carlson
Eric Zhang

ABOUT THE PROJECT

Ever wished you could take that diagram from your textbook and pull it out of the page to look at it from every angle? AR Textbooks allows you to use your phone to bring diagrams to life! By using a Google Cardboard, it allows full sterescopic viewing of the diagram that virtually jumps out of the page. Last semester, we created a working prototype, and this semester we will be enhancing the functionality and creating a polished demo that showcases the potential of AR to effectivey evolve the textbook.

AR Texbooks

TEAM ROLES

Software Developer
Responsible for improving the existing prototype and implementing additional features
Qualifications: Experience with Unity (preferred), OpenCV or other Computer Vision libraries/SDKs (optional but a plus).

3D Artists
Responsible for creating the assets that will be utilized in our demo. Qualification: Maya or equivalent

Unity Developer
Reponsible for improving the demo in Unity.

UX Designer
Responsible for performing design user study to provide guidance for user interface development.

Microgames

FALL & SPRING

TEAM LEAD

Andrew Shibata
Rohan Murthy

ABOUT THE PROJECT

Have you played WarioWare? If not, it's a bunch of wacky microgames where you have 5 seconds to complete an objective. For example, put a paper into a shredder, or assemble a sandwich. In this team you will learn how to use tools such as Unity and Maya and work in a team environment to make your own microgames for the HTC Vive. No experience necessary, just a good attitude and tenacity is required. The point of this team is to have an exciting and thoughtful learning experience for those that are interested in content creation on any platform imaginable.

Microgames

TEAM ROLES

Game Developer
Learn Unity to create fun, immersive experiences. Useful Classes: 61A, 61B, CS184, CS280

3-D Artist
Use Maya to create 3D models for game characters, tools, or obstacles.

VR Animated Short

FALL & SPRING

Create, design and animate a short clip that will be take advantage of the full scope of virtual reality's capabilities for interaction!

TEAM LEAD

Isabel Zhang

ABOUT THE PROJECT

The VR Animation team is working on creating an animated short that allows an audience to discover videos and films in a completely different medium than what people are accustomed to. Never before have people been able to experience such intimacy with the characters in a film. Akin to Oculus's Henry, this team plans to make a short clip (1-5 minutes) that explores story-telling in a three dimensional space.

DEMOS AT CAL DAY

TEAM ROLES

3D Artists
Design and model characters/props to be shown in animated short [Experience with Maya, Blender, etc.]

Sound Engineer
Create/find sound effects and link within game engines like Unity/Unreal to create realistic experience for viewer [Experience with audio programs, experience with Unreal Engine and Unity Game Engine a plus]

Animators
Animates with models created by 3D artists [Experience with animation / VR design principles]

Dark VR

FALL & SPRING

Exporling potential “misuses” of VR/AR

TEAM LEAD

Keiran Paster

ABOUT THE PROJECT

Dark VR is about exploring potential “misuses” of augmented and virtual reality technology. For example, what would advertising look like? Dark VR could explore the use of 360° cameras for food advertising. Or, what if augmented reality was used to overlay a trajectory next to a Nerf Gun? Dark VR is about researching the effects of these types of ideas.flight plans and designated safe regions.

Subliminal Advertising

TEAM ROLES

Unity Developer
Experienced in working with Unity. Preferably strong at C#.

Art Designer
Experienced with 3D modeling. Preferably has experience on previous 3D game projects.

Researcher
Designs experiments and has a say in the direction of the project.