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.

ABOUT THE PROJECT

The ISAACS project envisions a new way to fly and control drones - with Augmented Reality. Using AR headsets, we can holographically project intuitive and contextualized 3D interfaces into the real-world. Done right, this can extend the operator’s perception, allowing them to navigate fleets of drones through complex environments with little to no training.

Backed by Berkeley’s Center for Augmented Cognition and Microsoft Research, Project ISAACS represents a new vision for not just AR, but Human-Robot Interaction as a whole.

We’ve laid the groundwork over previous semesters but there’s still more to do. Join our team if you’re interested in researching SLAM and safety assurance algorithms, designing new paradigms for Human-Robot Interaction, and/or writing applications for the Microsoft Hololens.

TEAM ROLES

Computer Vision Researcher
Develop computer vision and control systems solutions, and deploy them onto drones. ROS and SLAM knowledge is a plus.

UX Designer
Design and test AR interfaces

Unity Developer
Responsible for building the interface and interactions in Unity.
OpenARK (Augmented Reality Kit)

Creating fluid interface between humans and holograms

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

TEAM ROLES

TEAM LEAD
Will Huang
Bill Zhou

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
Exploring the rapid growth of mobile AR

ABOUT THE PROJECT

The Mobile AR & Textbooks team was created to apply the newest developments in mobile AR to different industry verticals. We are always looking for real-world problems to solve using creative mobile AR solutions, with a particular focus on education. Last year, we were able to bring a childhood novel to life with real-time net-code and annotation toggling. This semester, we will be working with the Innovative Genomics Institute to help visualize CRISPR genome editing technology. Join our team if you're passionate about educational software, have an affinity for genomics research, or simply interested in mobile augmented reality!

TEAM ROLES

ARKIT/iOS Developer
Interested in a more advanced mobile AR challenge? Explore even more functionality with ARKit! Qualifications: Own Mac + iOS device, familiarity with Swift / XCode

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

Unity Developer
Responsible for implementing features and helping maintain stability in Unity updates. Qualifications: Strong familiarity with Unity or C#,
The Immersive Cinema team is creating ways to tell stories through 360 film. We are focused on actively creating content and researching the narrative properties of this new medium. Our goal is to facilitate creative expressions while simultaneously pushing members to explore new boundaries in scriptwriting, production, editing.

### About the Project

The Immersive Cinema team is creating ways to tell stories through 360 film. We are focused on actively creating content and researching the narrative properties of this new medium. Our goal is to facilitate creative expressions while simultaneously pushing members to explore new boundaries in scriptwriting, production, editing.

### Team Roles

**Filmmaker**
Responsible for writing scripts, composing and filming scenes, and editing 360 footage. Experience in these areas is a plus.

**Editors**
Responsible for editing 360 footage. Experience in any video editing software is preferred, but we will be using Adobe Premiere to edit content.

**Creative Researcher**
Doing research on 360 filming, UX, latest standards in 360 film, market research, equipment research, and alternative application for 360 content.
Our objective is to explore the exciting potential of multiplayer game development in virtual reality. We're using the Unity 3D engine to create Landships, a multiplayer tank combat simulator. Players will take on the various roles of a tank crew, with one driver, one shooter, one loader, and one spotter, and work together to battle enemy tanks controlled by other teams or AI. Can VR deliver an immersive enough experience to simulate this kind of cooperative team play?

ABOUT THE PROJECT

TEAM LEAD
Ross Luo
Oscar Dorado

TEAM ROLES

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

Game Developer
Design and plan features and gameplay of Landships, and build it using Unity 3D.

3D Modelers
Create assets that will be used in Landships. Experience with Maya or equivalent required.

UI/UX Designers
Work to create as enjoyable and intuitive an experience as possible. Requires creativity and experimentation to solve UI/UX problems in VR.
Creating compelling animated stories

ABOUT THE PROJECT

Are you a fan of animated films? Our team expands student films from traditional 3D into 360 VR. This semester we are focused on camera work and lighting in order to deliver a final polished product, but we are looking for a diverse range skillsets. Apply for the Immersive Animation team and be a part of cutting-edge VR research!

TEAM LEADS

Madi Hight
Howe Cui

TEAM ROLES

3D Artists
Responsible for editing footage and sound.

Cinematographers
Responsible for placing and directing cameras in 360.

Lighting Artists
Responsible for placing and manipulating lights in 360.

2D Texture Artists
Responsible for painting backgrounds and textures for animated scenes.

3D Modeling Artists
Responsible for creating new and updating old assets.
With the addition of two Windows MR headsets to the VR@B arsenal, our team is looking to update and port existing projects such as Virtual Campanile to the Windows Store. We are accepting applications from enthusiastic students with previous Unity, 3D modeling, VR development, or Hololens experience.

ABOUT THE PROJECT

Exploring new possibilities with the mixed reality paradigm

TEAM LEAD

Damani Grover

TEAM ROLES

Unity Developer
Responsible for handling Unity scenes and updating interfaces and game mechanics as

3D Artist
Responsible for modeling/updating assets in Maya or Blender.

Fire Extinguisher
This is brand-new hardware, and we need quick-thinking students that can help their teammates navigate the uncertainty. Previous VR/AR development experience is a must, and Hololens development experience is a huge plus.
Virtual Reality at Berkeley's Outreach Team is dedicated to improving access to VR in the community and promoting events like hackathons, demos, and speaker series.

We are looking for anyone interested in volunteering for and planning outreach. One of our current projects is VR@BPL, where members hold weekly demos and open hours at the Berkeley Public Library for the community. For most of the visitors, it is their first time getting to experience VR and the only opportunity they have to regularly play around with the technology.

ABOUT THE PROJECT

TEAM LEAD

Madi Hight

TEAM ROLES

Design Committee
Responsible for creating promotional material for events or partnering with designers from our partner organizations.

Volunteer Committee
Helps set up, demo, and take down equipment for events. There will be lots of chances to network or just hang out with other VR enthusiasts.