

Adaptive HCI Senior Design Project

- Finalize VideoProc/YOLO writeup
- Refine YOLO Model (4 Users)
- Optimize VideoProc Resource Utilization
- Fine Tune YOLO Workflow
- Integrate character recognizer with TF-Lite
- Integrate digit recognizer with TF-Lite
- Develop Inference character recognizer
- Finetune inference digit recognizer
- Design Document
- Alpha Team Time Card
- Integrate Zaynab's Letter Recognition ML Model with Xamera for AR 2D Letters
- Release Xamera Beta 1.0 as a team
- Check in #3
- Conduct Unit and Integration tests with Xamera
- Release Xamera Research Preview 1.0 for Senior Design Competition and RoFin Research Paper as a team
- Draft Poster
- Check in #4
- Alpha Prototype Demo
- Design Document Presentation
- Extract bounding centers
- Research existing models for Inference
- Apply the same logic from OpenGL ES to Unity 3D <3D Paths and 2D Letters>
- Alpha Prototype Demo
- Conduct research and create documentation for integrating Xamera with VR
- Integrate Xamera AR with Xamera as a library or component
- Help Soham to integrate YOLO model for 3D Pathing
- Integrate YOLOv8 into Xamera
- Complete the research paper draft for Rollity
- Complete all the CIS 4962 assignments related to Xamera
- Final Poster
- Check In #5
- Complete Research Paper for Rollity on Overleaf as a team
- Develop Inference model
- Collect data for Inference
- Develop and train YOLOv8
- Integrate PyTorch with Xamera for Machine Learning and Smooth Gesturing
- Increase Rolling Shutter Camera Frequency Rate to 8 KhZ (or something above 1 KhZ)
- Implement OpenGL and create a base for Alan to work on
- Project Team Check-In #3
- Implement OpenGL library in Kotlin (Android Studio)
- Integrate Soham's Video Processing Algorithm with Xamera
- Integrate Xamera with Samsung Galaxy A30
- Requirements Document Draft
- Requirements Document Presentation
- Requirements Document Final
- Project Team Check-In #4
- Reintegrate Soham's Algorithm for Real-Time Video Processing
- Final Use Case Specifications
- Study Zhang's Research
- Android App + AR/VR Image Processing Use Case
- Use Case Summary+ Presentation
- Slides for Client Meeting #1
- Machine Learning Use Case
- Project Team Check-In #2
- Research and Practice Android App and VR/AR
- Research and practice gesture recognition ML
- Research and Practice 3D Simulation
- Research and Practice Image Processing / Computer Vision
- Image Processing Use Case
- Slides for Client Meeting #2
- Project Management Plan Presentations
- Implement Settings and About Screens on Xamera
- Project Teams Formed, Client Presentations Summary
- Read Trajectory-Based Air Writing research paper
- Client Presentations and Course Overview
- Project Team Check-In #1
- Implement and Test Rolling Shutter Camera Frequency Optimization in Settings
- Project Team Check-In #5
- SQA Plan Presentations
- Initial Prototype of IP in Python
- OpenCV in Xamera
- OpenCV in Xamera
- Postmortem and Feasibility Prototype Demo
- Collect data for YOLOv8

Adaptive HCI Senior Design Project (234d)

