

Due: Monday, October 2, 2017, 8:00 AM (submit to BlackBoard, under Assignments)

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Team Name: 10

Team Members and email addresses:

- Matt Bauer <matthewbauer@ku.edu>
- Josiah Gray <j305g268@ku.edu>
- Shaina Krumme <s.e.krumme@gmail.com>
- Ethan Ward <ethanandrewward@gmail.com>
- Li Yehan <y494340206@ku.edu>

Contact: Shaina Krumme <s.e.krumme@gmail.com>

Project Sponsor (if any): none

Name: interpretAR

Project Description:

- Why is the project being undertaken? Describe an opportunity or problem that the project is to address. What will be the end result of the project?

We are creating an augmented reality iOS application that uses object recognition to label objects in a foreign language. The user selects the foreign language that they would like to have displayed. The goal of our project is to help make it easier for users communicate in countries where they do not know the language. The visual and language representations of the world around them makes it simple and relevant to what they are doing at that moment. The application is also for people to use in their daily lives to learn and retain foreign languages. Since our application is educational, it could also be used in classroom settings as an engaging teaching aid.

Apple introduced their ARKit in 2017. We would personally like to explore this new technology as well as gain experience with machine learning and iOS development.

We would like for users to engage in the world around them while learning a foreign language. We don't want them to have to look up words in a book or over the internet. The augmented reality component of our application will allow them to see what is currently happening around them, and only see relevant words. This will hopefully speed up how quickly they can communicate with the world around them. This makes learning a foreign language fun, and will hopefully encourage more people to learn!

Project Milestones (“Deadlines,” not starting dates):

First Semester:

- a) Get familiar with Apple ARKit and Swift. (October 13th)
- b) Finalize design of app (October 20th)
- c) Create a basic iOS app with interface (November 3rd)
- d) Make the iOS app able to recognize different objects in real world (November 24th)
- e) Basic incorporation of language features (December 8)
- e) Rough draft of documentation (December 8)

Second Semester:

- a) Ensure that the app can translate languages. (January)
- b) Improve the performance of the app (February)
- c) Consider incorporating additional features, depending on progress (February)
- d) Finalize documentation (March)
- e) Test app on real users and potentially release on App Store. (April)

Project Budget:

- **iPad (\$429)**
- **Apple developer license (\$99)**
- **MacbookPro (\$1300)**

- Special training (e.g., VR)
 - Self-learning via ARKit tutorial (no cost)
 - Github (for team members who aren't familiar)
- When they will be required?
 - As soon as possible

Work Plan:

- Who will do what? (may change)
 - Machine learning components: Shaina and Ethan
 - iOS front-end development: Shaina and Josiah
 - iOS back-end development: Ethan and Yehan
 - ARKit: All
 - Language Translation: Josiah and Yehan
- (Potential) jobs
 - Everyone will work on iOS development, implementing the AR components, and implementing the language components. We will try to work on different features simultaneously so that we do not depend on each other to continue making progress and so that (hopefully!) we can avoid conflicts on Github. The above list

of “who will do what” reflects who will potentially be most involved in each area of development.

Github link: <https://github.com/ethanaward/InterpretAR>