Amber Dolezal

**Introduction**

The project should be introduced. Basic information about the sponsor and their need for the solution should be explained. Information should be presented so that any technically minded person can understand the concepts. Depending on the nature of the problem, a significant portion of this section may include explaining key concepts and terms necessary to understand the technical details of the project.

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Dr. Omid Semiari’s research interests include wireless communications, machine learning, cross-layer network optimization, signal processing, and context-aware networks with an emphasis on new technologies such as connected and autonomous vehicles, wireless extended reality, and industrial IoT. Recently, he has collaborated with students and alumni in MINDS LAB to conduct research on ultra-reliable low-latency communications, machine learning and communications, millimeter wave and terahertz communications, context-aware networks, autonomous vehicles and platoons, and wireless extended realities. Well within his research interests Dr. Semiari has requested to start pursuing a new project with this year’s ECE Senior Design Team, to design cutting-edge communication that would enable an AR/VR device to utilize a host computer for its processing. Such an upgrade will further the team’s efforts to focus on remote rendering, in an attempt to decrease battery consumption and increase memory availability.

However, before the start of the fall semester Dr. Omid Semiari left the University of Colorado, Colorado Springs to pursue another job. Due to this, our team knew we needed to get another sponsor that had skills that would pertain to this project. After several discussions amongst the team, we decided to reach out to Dr. Dana Wortman. Dr. Wortman is currently a senior instructor in Game Design and Development and also conducts research in Graphics and Information Visualization. Since our team had little to no experience with game development or utilizing Unity we thought her skills would be extremely helpful to our team and the remainder of this project.

In order to design a system according to Dr. Omid Semiari’s requests we decided our project would use a HoloLens 1 for AR capabilities and Unity for our game development and deployment. As a team we came up with the idea to design an AR Blackjack Assistant application to use as a test to show that our project did indeed decrease battery consumption and increase memory availability.