

# UNIVERSITY OF SOUTH FLORIDA

## *Defense of Master's Thesis*

Trilateration-Based Localization in Known Environments with Object  
Detection  
by  
Valeria Salas

For the M.S. Degree in Computer Engineering

Many strategies for localization have been proposed, the majority of which rely on distance measurements and estimates. The proposed approach is a method that combines single-camera localization techniques and the principle of trilateration to perform localization in a known indoor environment using a camera, the proposed system can detect custom objects using object detection in the environment and calculate an approximation of the camera's position. To recognize the local environment input data such as the size of the environment and the coordinates and sizes of the objects were given as input to the system together with the distance to such objects calculated by a previously calibrated distance detection algorithm.

Friday, October 2<sup>nd</sup> 2021

11:00AM

Online (Microsoft Teams)

Please email for more information

valeriasalas@usf.edu

THE PUBLIC IS INVITED

Examining Committee

Alfredo Weitzenfeld, Ph.D., Major Professor

Shaun Canavan, Ph.D.

Marvin Andujar, Ph.D.