California State University San Bernardino
School of Computer Science and Engineering

CSE 6950 Graduate Independent Study

<u>Date</u>

May 21, 2021

<u>Time</u>

3:00 PM

<u>Location</u>

https://csusb.zoom.us/j/98898643431

<u>Title</u>

Methods for Object Construction and Recall from Image Data

<u>Student</u>

Peter Wright

<u>Advisor</u>

Professor Yan Zhang

<u>Abstract</u>

This was a study to investigate the feasibility of creating a hybrid system using readily available technology in novel configurations. The potential system should be capable of conducting a 3D object-based simultaneous localization and mapping (SLAM) functionality able to locate itself and navigate without reference to external mapping systems such as GPS/GLONASS/etc, or any ground instrumentation after an initial training period in an area of interest. This study is partly about an education in the technologies involved for the student, partly an industry survey of supporting technologies, and partly an initial formulation of a proposed design for the system architecture. The motivation is for the creation of low-cost navigation sensors independent of external systems. The methodology is that education and research will be conducted by the student independently, with periodic discussion with CSUSB faculty, and finally a proposed high-level system design will be created, to be refined for future prototyping.