

MICHIGAN STATE
UNIVERSITY

Alpha Presentation

Augmented Reality Mechanic Training

The Capstone Experience

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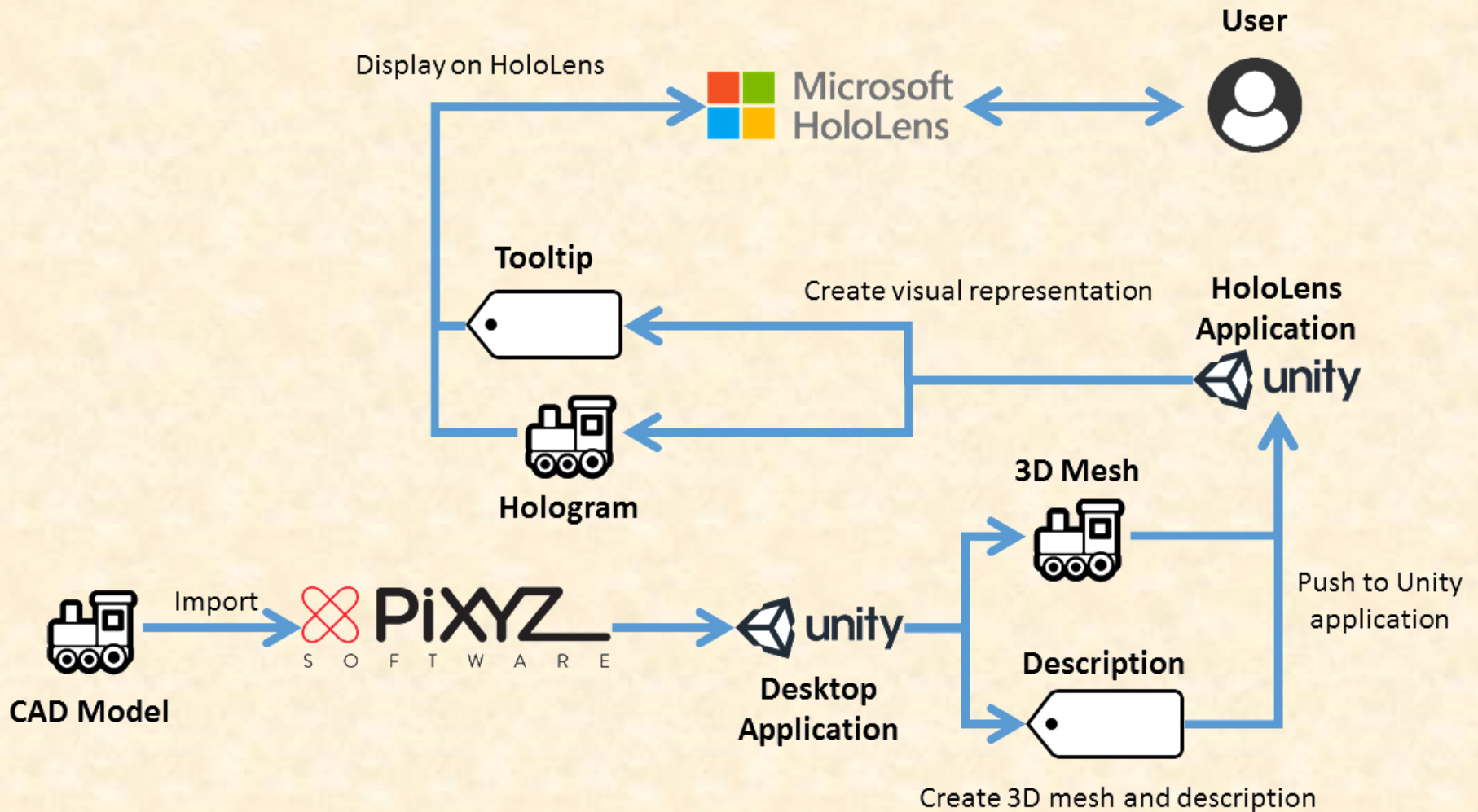
From Students...
...to Professionals

Department of Computer Science and Engineering
Michigan State University
Fall 2018

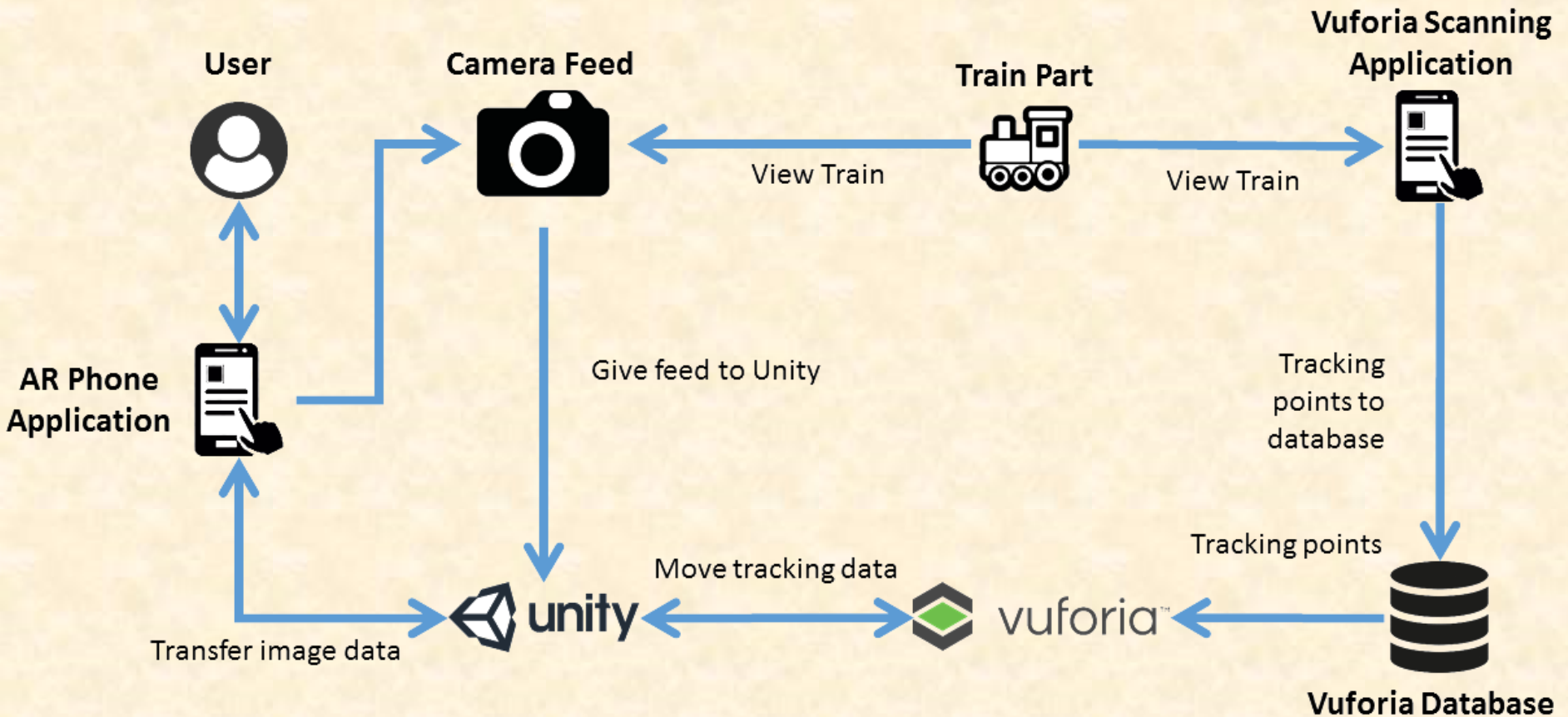
Project Overview

- Two immersive training experiences for mechanics
- *Learn About Machinery (HoloLens + PC)*
 - View labeled holograms of CAD models
 - Select parts to display information
 - Import CAD models through PC application
- *Build a Train (Android)*
 - Guides user through assembling a 3D printed train
 - Uses object recognition to locate train cars

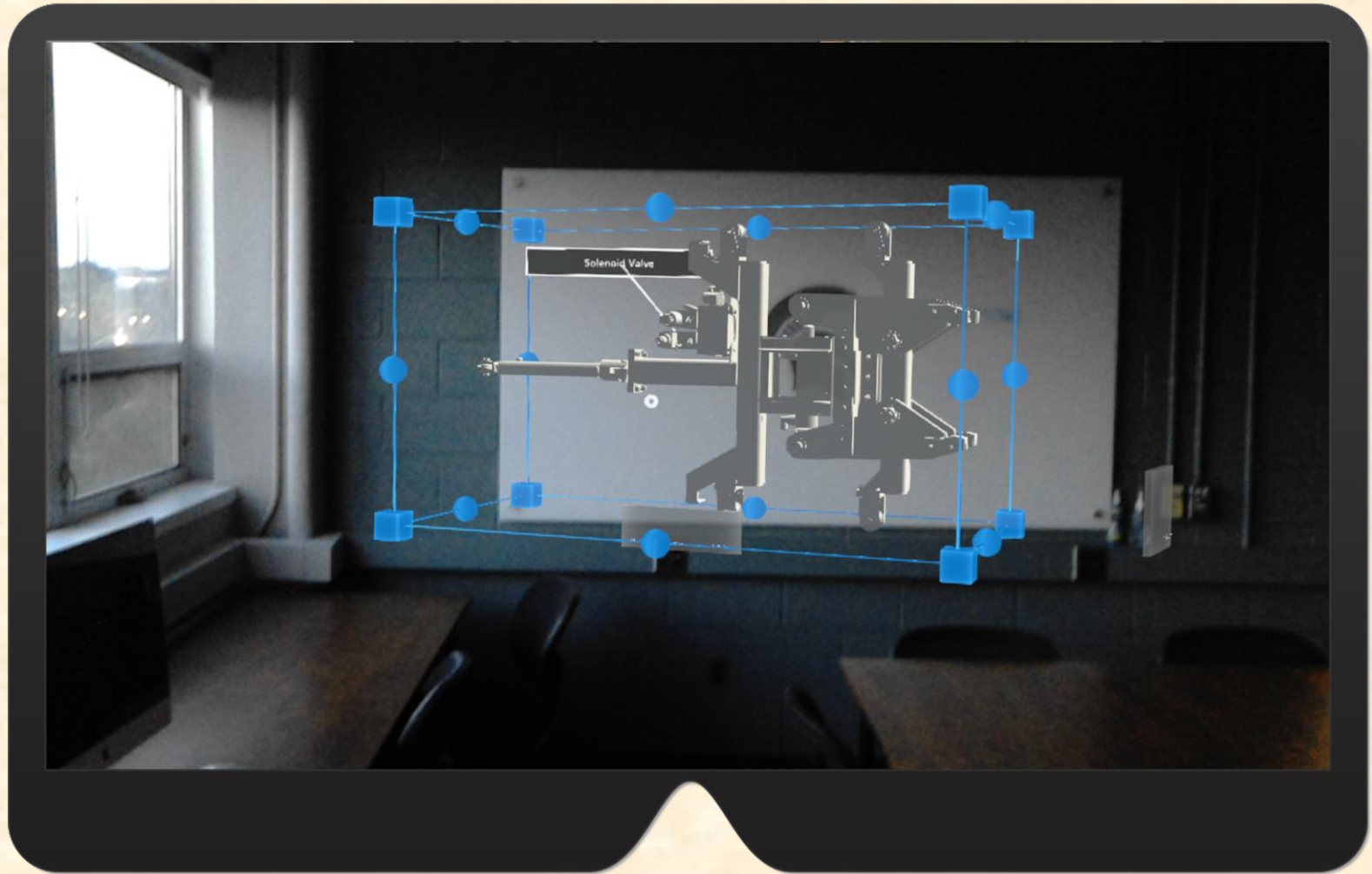
System Architecture



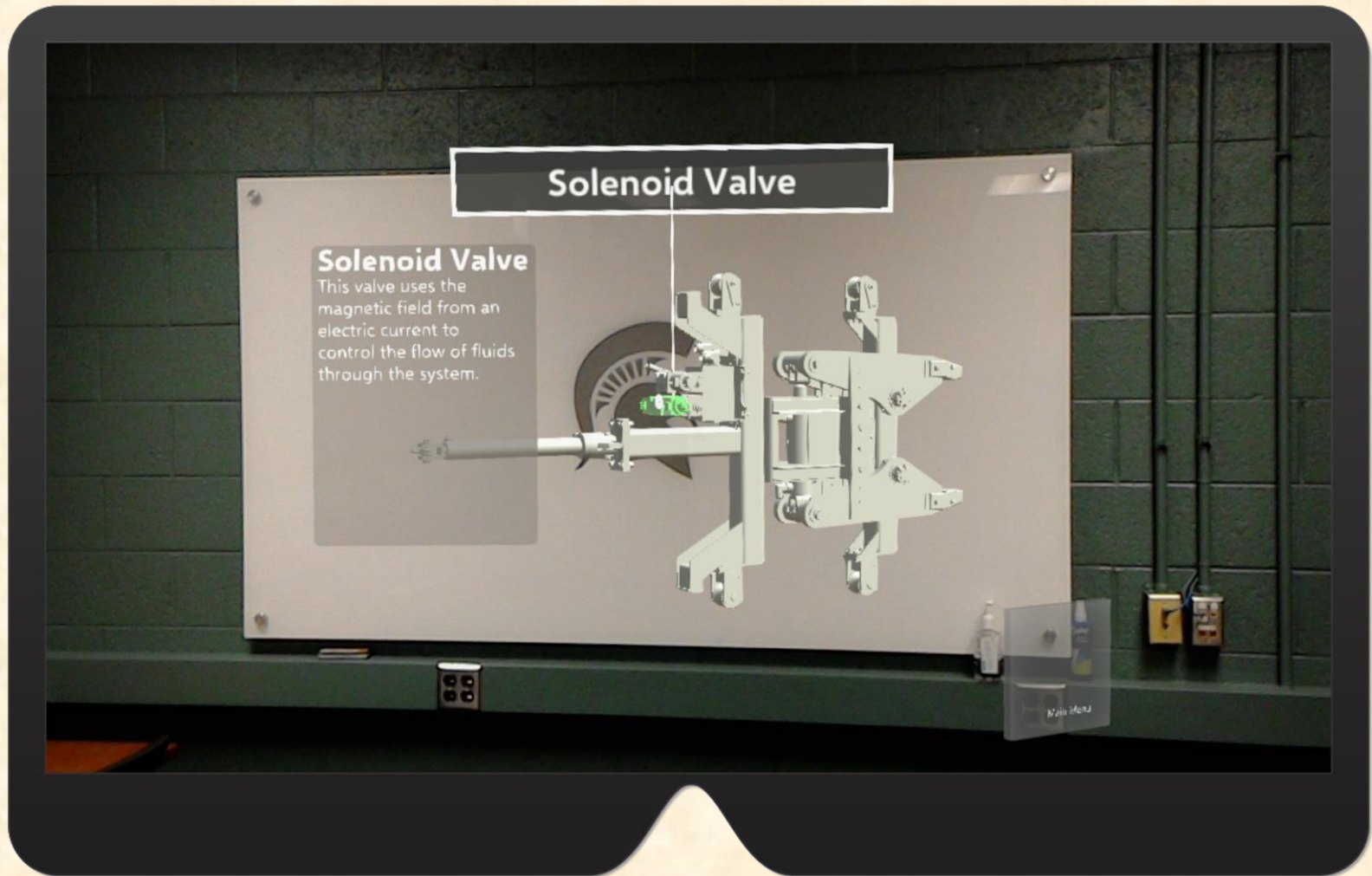
System Architecture



Learn About Machinery – Bounding Box



Learn About Machinery - Tooltip



First Step of Build a Train

Connect the engine to the passenger

Engine

Passenger



Second Step of Build a Train

Connect the passenger to the caboose

Passenger

Caboose



Completion of Build a Train



What's left to do?

- *Learn About Machinery*
 - HoloLens UI/UX improvements
 - Finish desktop UI
 - File transfer from desktop to HoloLens
- *Build a Train*
 - Indication of user errors
 - UI/UX improvements
 - Enhance detection abilities

Questions?

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