

Team 27

Machine to Human Vision

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Executive Summary

Development Standards and Practices Used

1. **Agile** - Team planning and management.
2. **Software Frameworks** - openCV, numpy
3. **Engineering Standards** - IEEE 2671-2022, GMSL2 FAKRA, USB 3.1 Type C

Summary of Requirements

1. Implement a stereo-vision setup using two cameras to mimic human vision.
2. Determine the distance an object is from the cameras using depth perception and sensors.
3. Implement a haptic feedback system that communicates to the user the depth observed.

Applicable Courses from Iowa State University Curriculum

- CprE 381
- ComS 227
- ComS 228
- CprE/ SE 185
- CprE 281
- CprE 288 (Roomba Labs)
- ComS 309 (Teamwork)

New Skills/Knowledge Acquired Not Taught In Courses

1. **Production Level Team Collaboration** - Learned in internships, clubs, TA roles, etc.
2. **Hardware Experience** - Undergraduate research, internships

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