

Augmented Reality Magnifying Loupe for Surgery

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Goals:

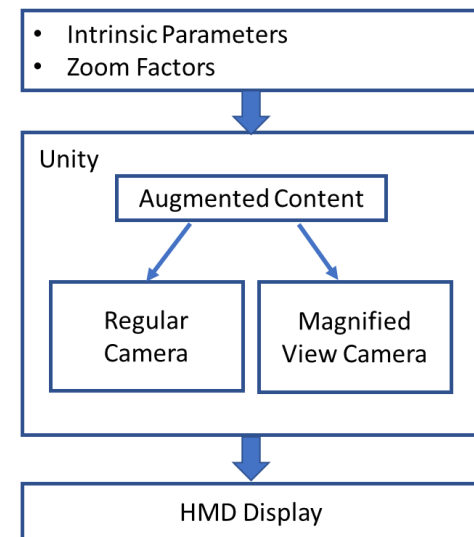
- Design a surgical loupe mount for optical see-through head-mounted display (HMD)
- Develop a calibration method to associate the field-of-magnified vision, the HMD screen space and the task workspace.
- Evaluate the proposed system.

Significance:

- Increase the clinical acceptance of HMD based augmented reality system.
- Provide accurate guidance and navigation in a wide range of computer-integrated surgery.

Results:

- A working prototype with 3.47 ± 1.03 mm error in magnified view and 2.59 ± 1.29 mm error in regular view.



Demo:



Maker alignment in the magnified view
(video taken behind the Magic Leap One
display)

Surgical Use Case:



Augmented target indicator in the
magnified view for root canal therapy