True Reflection: A Smart Mirror

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Purpose

"True Reflection" is a revolutionary new smart mirror that allows people to virtually try on different accessories by talking to the mirror. Accessories are worn by overlaying the products onto the user's face. The underlying technology beneath this concept is the use computer vision and voice activation.

Approach

- Custom-made frame
- Two-way glass mirror with LCD computer monitor behind to display user interface from Raspberry Pi.

Features:

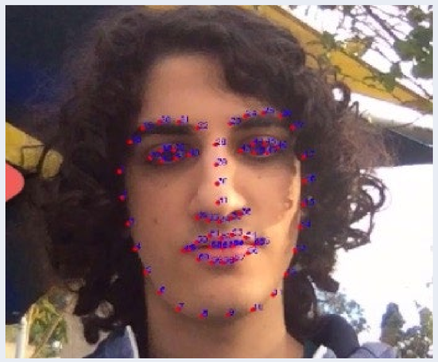
- Computer vision
- Voice activation
- Augmented reality

Tools Utilized

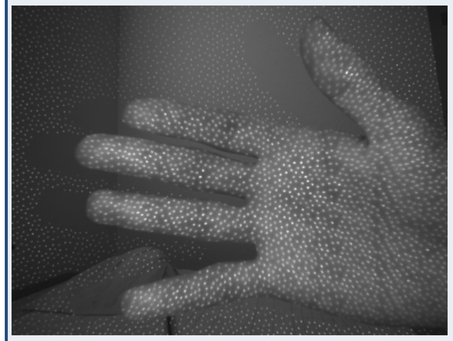
Raspberry Pi, python, OpenCV, Google Assistant SDK

How True Reflection Works

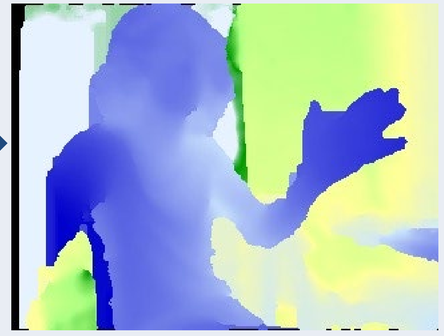
Intel® RealSense™ View



Detected Facial Features with OpenCV

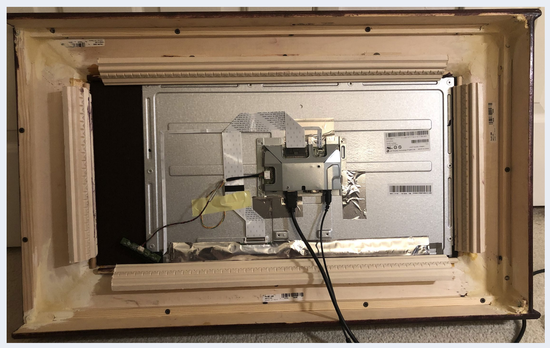


Intel® RealSense™ View



Intel® RealSense™ Depth View

Custom Frame



Final Result

True Reflection displays accessories after accurately detecting facial features

Future Improvements

- Allow users to try on clothing
- Companion mobile app
- 3D Integration with Intel® RealSense™
- Custom voice commands
- Machine learning for providing clothing suggestions to users based on weather and user's taste
- Custom hardware

Citations

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https://developers.google.com/assistant/sdk
https://docs.python.org/3/library/index.html
https://software.intel.com/en-us/realsense/documentation