

Intel® RealSense™ Touchless Control Software (TCS)

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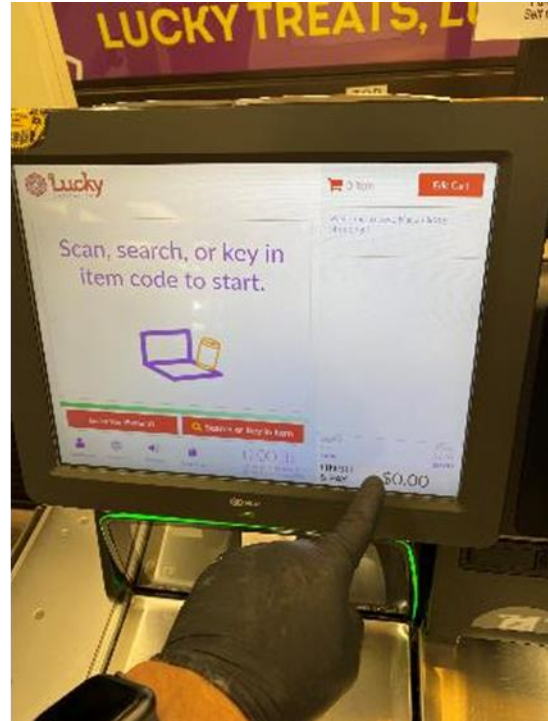
Make Touch Touchless

- In the current world environment, there is a consumer driven desire to shift from touch to touchless on public devices
- Many systems exist with different levels of compute
- Manufacturers are looking for an easy “add-on” to change their touch systems to touchless



Simple Goal: Make Touch, Touchless

For Kiosks and Digital Signs – Not for home PC



1. Retrofit any Screen with "Touchless" interaction
2. Simple, intuitive, touch-like interaction with 3D visual feedback
3. No change needed to Graphical User Interface or apps
4. Tracks any finger (or pen, object)
5. Works with any gloves
6. Works under any lighting conditions (sunlight or dark)

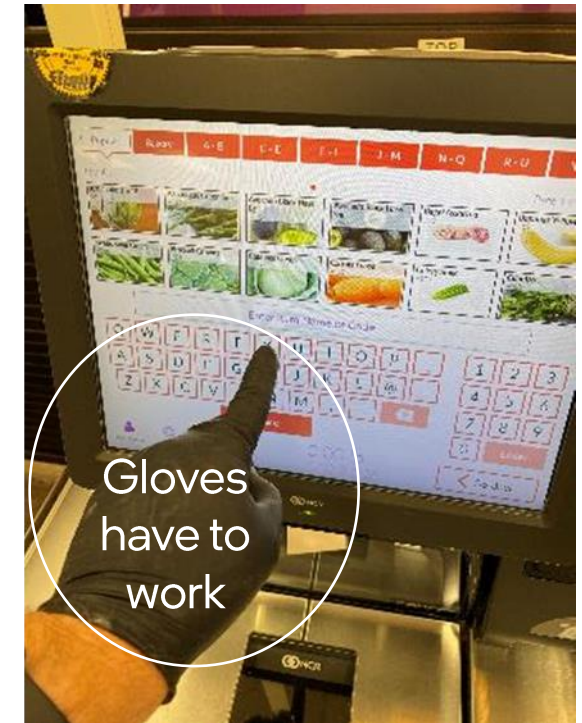
Simple Goal: Make Touch, Touchless

Simple, intuitive, touch-like interaction with 3D visual feedback

Mount an Intel® RealSense™ Depth Camera here

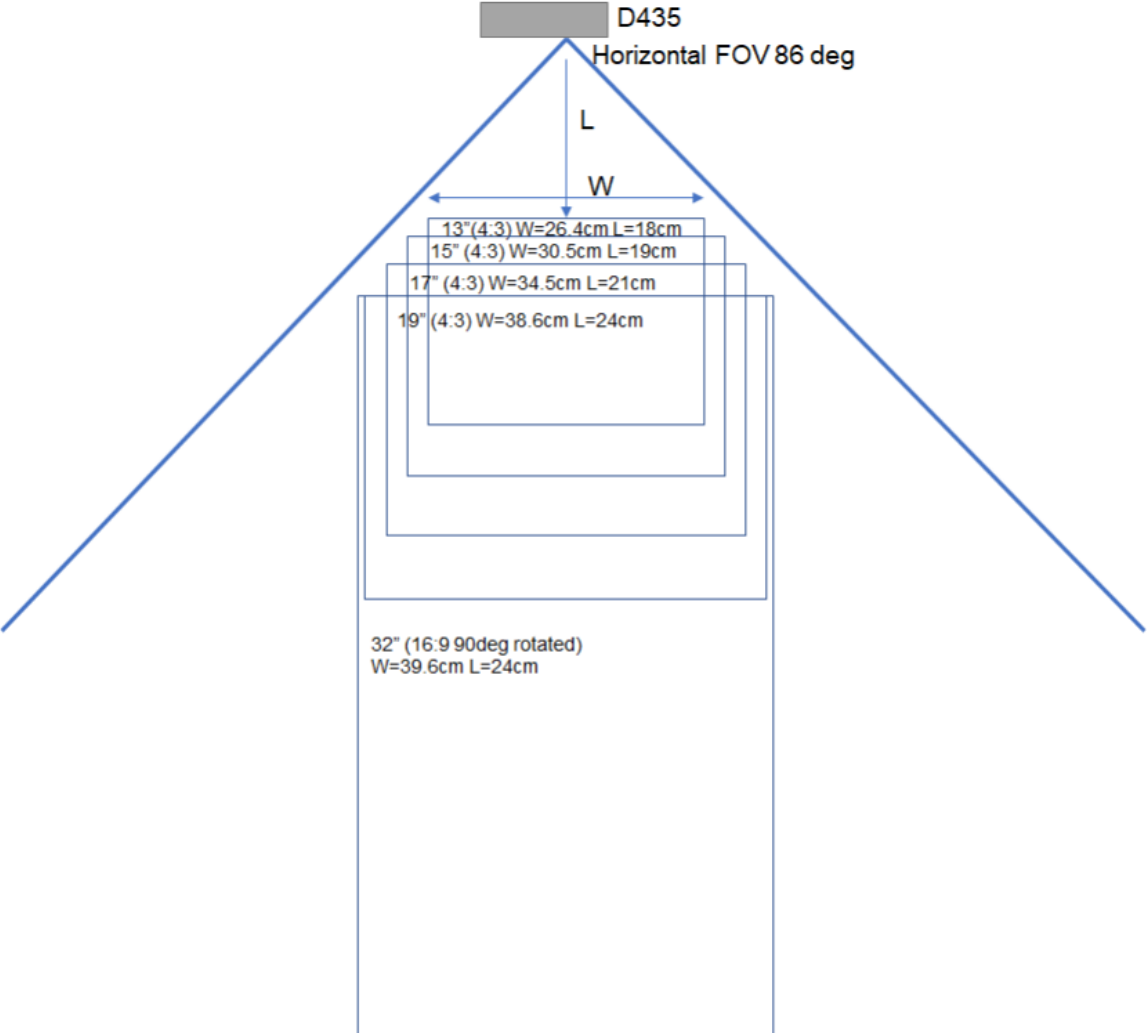
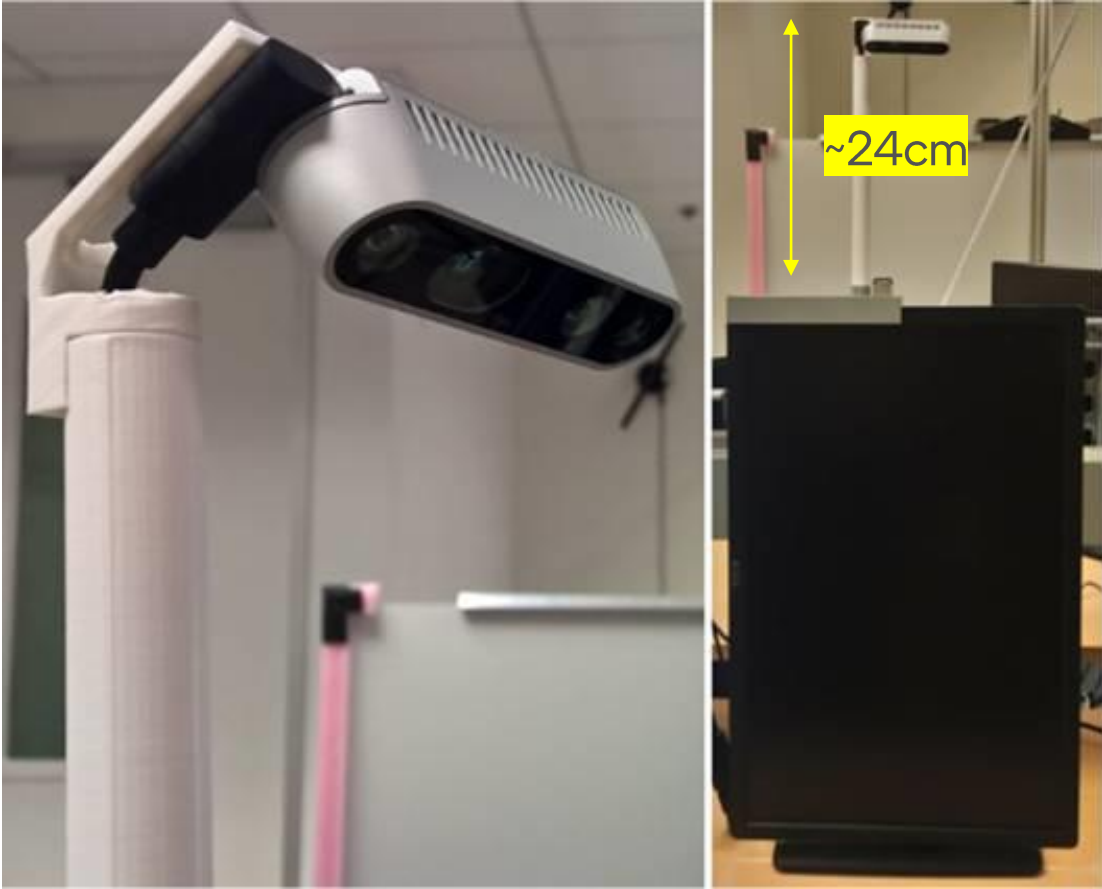


Coverage of the screen size
(Intel® RealSense™ Depth Camera
D435 is the optimized camera for this)

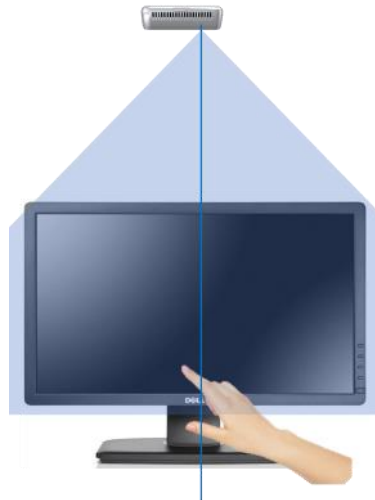
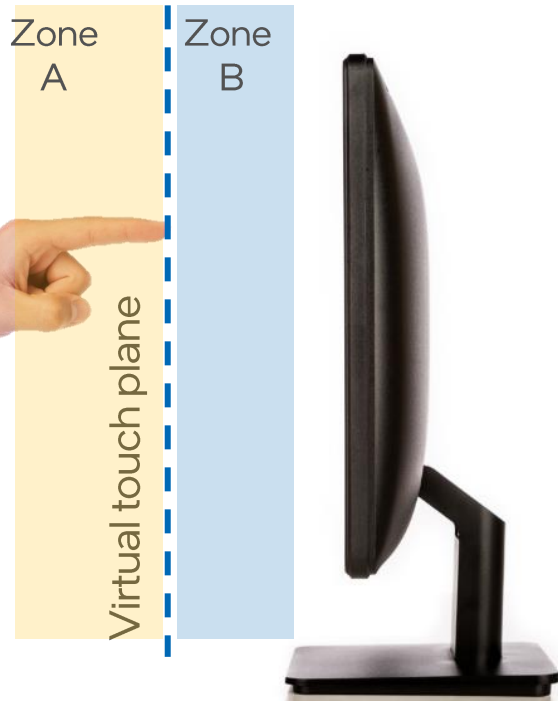


No changes to existing UI

TCS Camera Mounting example



Intel® RealSense™ TCS Setup



1. **Depth Camera (RGB-D):** Depth Camera with embedded ASIC is easy to connect to an existing system through USB3

2. **Touch interaction:** Depth camera defines a "virtual touch plane". A finger is tracked very accurately in 3D, and mouse events are sent when plane is crossed.

3. **3D feedback:** A circle indicator on the screen provides visual feedback of where the user is pointing and when they perform a "push" action.

NO user-training required



CAMERA



INTEL REALSENSE D435
SN: 827312071240

TCS license activated Tue Apr 13 14:29:00 2021

VIEW

SETUP



Landscape



MONITOR

27.0" Display (16:9) Landscape
W x H: 598 x 336 (mm)
Resolution: 1920 x 1080

MODIFY



VIRTUAL TOUCH COVERAGE

Full screen 100%
Effective W x H: 598 x 336 (mm)
Effective Resolution: 1920 x 1080

MODIFY



CAMERA DISTANCE

Minimum: 385 (mm)
Configured: 385 (mm)

SETUP

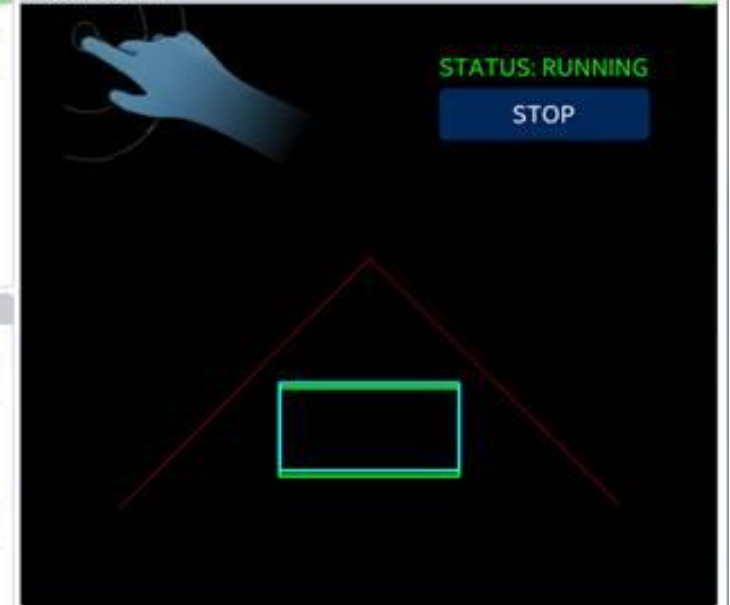
CALIBRATION

MANUAL

AUTO

RESET

VIRTUAL TOUCH



STATUS: RUNNING

STOP

MESSAGES

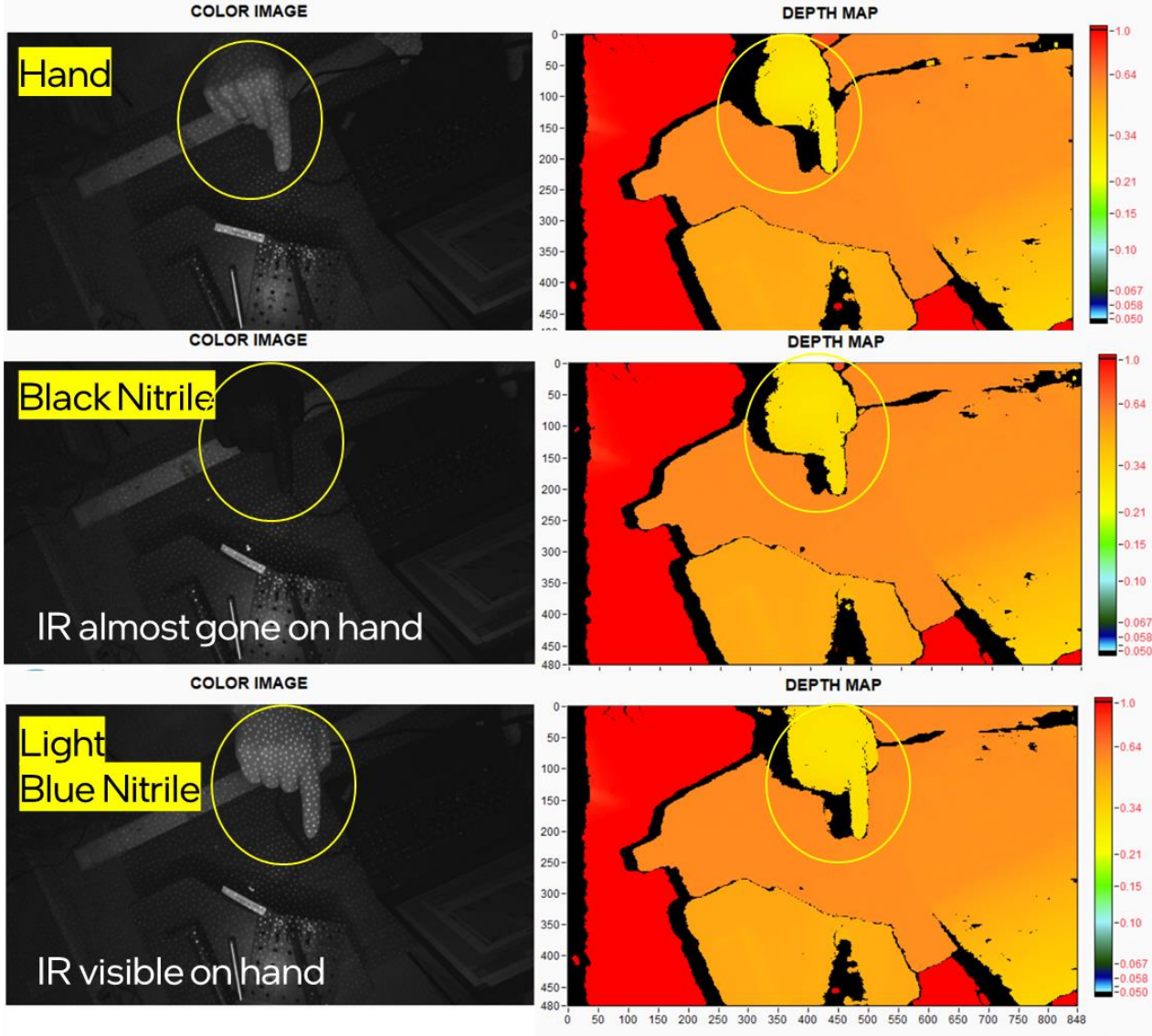
Clear Copy

2021-04-18 20:13:48 INFO: preparing touchless control ...
2021-04-18 20:13:48 INFO: application settings and configuration created at C:\Users\gwen\AppData\Roaming\Intel\TCS
2021-04-18 20:13:48 INFO: log files created at C:\Users\gwen\Documents\Intel\TCS
2021-04-18 20:13:48 INFO: C:\Program Files\Intel\Intel RealSense Touchless Control Software
2021-04-18 20:13:48 INFO: initializing touchless control ...
2021-04-18 20:13:50 INFO: configuring camera: Intel RealSense D435 (SN 827312071240) with resources/high_accuracyD435.json
2021-04-18 20:13:54 INFO: camera 827312071240 configured ok
2021-04-18 20:14:21 INFO: Auto preset completed

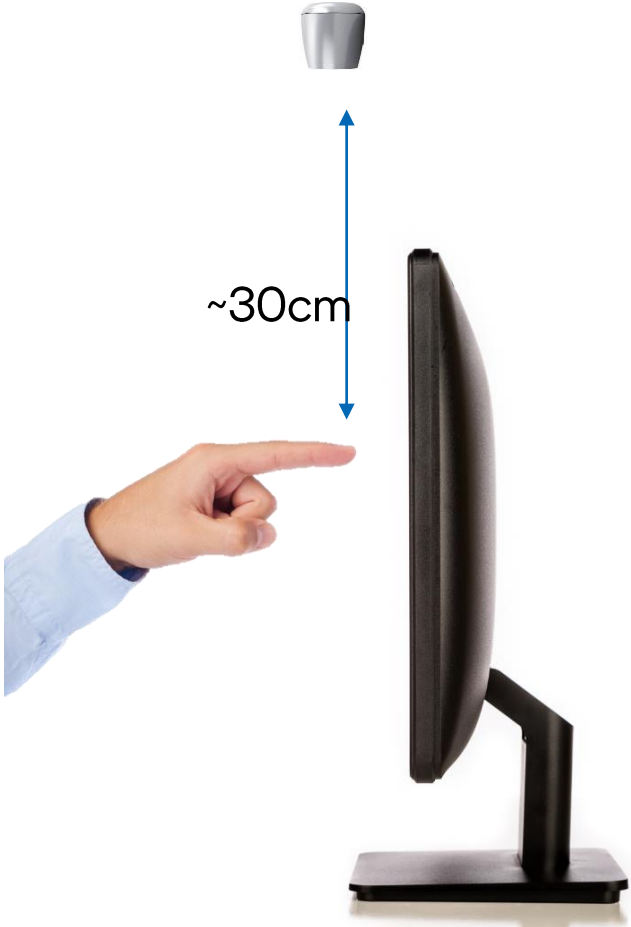
Highlights for TCS

	RealSense Touch Control Software
Cost	D435 Camera: ~\$189/u TCS Perpetual License: \$39/u
CPU load	Low CPU (Depth processed on embedded ASIC)
Size Screen	13" to 32" (Ask for larger screens)
3D Tracking: User can be farther from screen, and we visualize 3D touch overlay	Yes
Stabilized & responsive: Anti-shake feature & extremely fast tracking.	Yes
SW & SDK	RealSense SDK is Open Source TCS is not
Robust: Works in any lighting (Dark & Outdoor sunlight), and high speed (up to 300fps).	Yes

Robust Technology



D435 sees all hands



100mW laser, Gain=16, Exposure=4000, 848x480

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