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0 0 0 1 0 0 1 1 1 0 0 1 1 0 0 1 0
1 0 1 1 1 0 1 0 0 **T E C H N E T**

Natural User Interfaces mit Kinect, Cortana und HoloLens

Nicoleta Mihali



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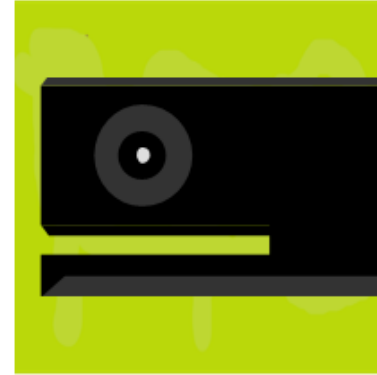
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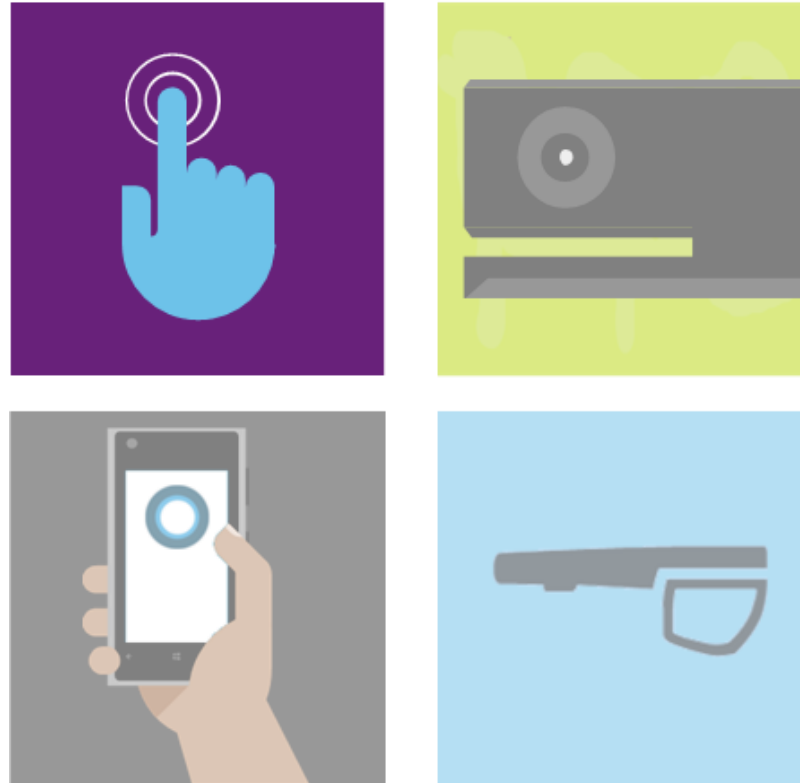
http://blogs.msdn.com/b/the_language_of_technology/

Agenda

NUI mit Kinect, Cortana und HoloLens



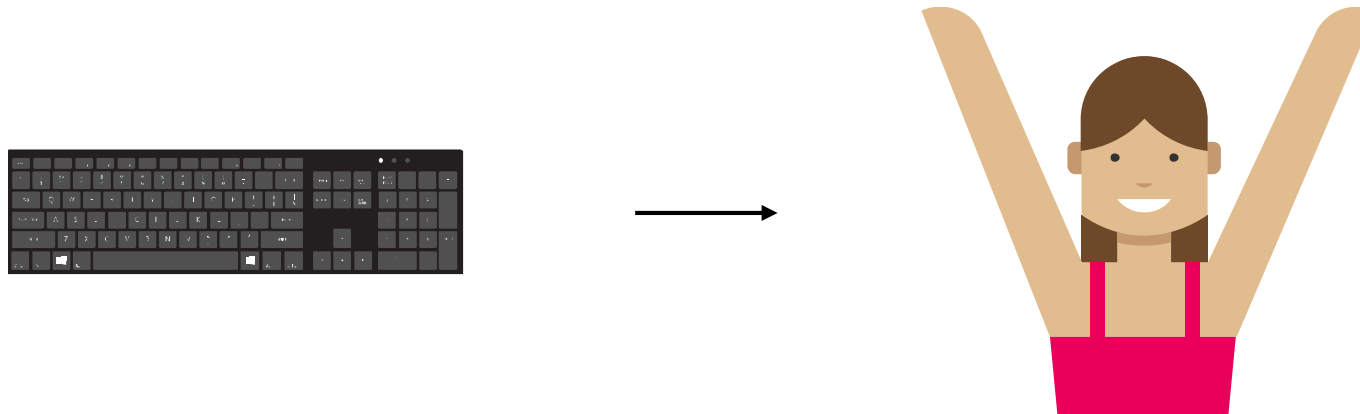
Natural User Interfaces



Natural User Interfaces

Was ist NUI?

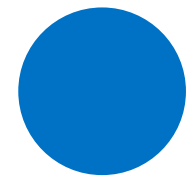
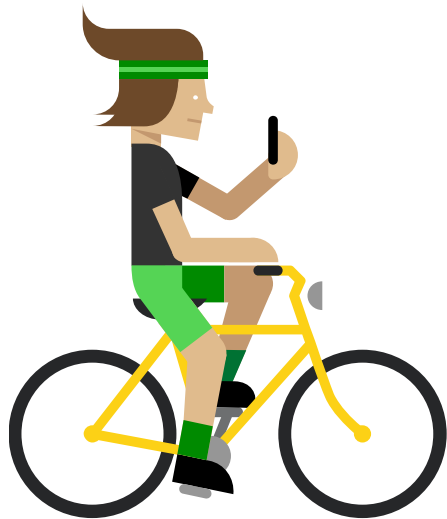
Natural User Interfaces (NUI) ermöglichen uns eine **natürlichere** Kommunikation mit Technologie



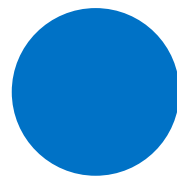
Natural User Interfaces

Multimodalität

- Multimodalität macht NUI mächtiger und natürlicher.



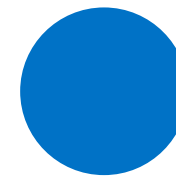
KEYBOARD
+
MOUSE



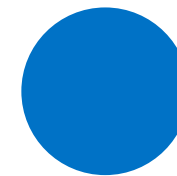
VOICE



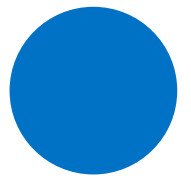
GESTURE



TOUCH



VISION

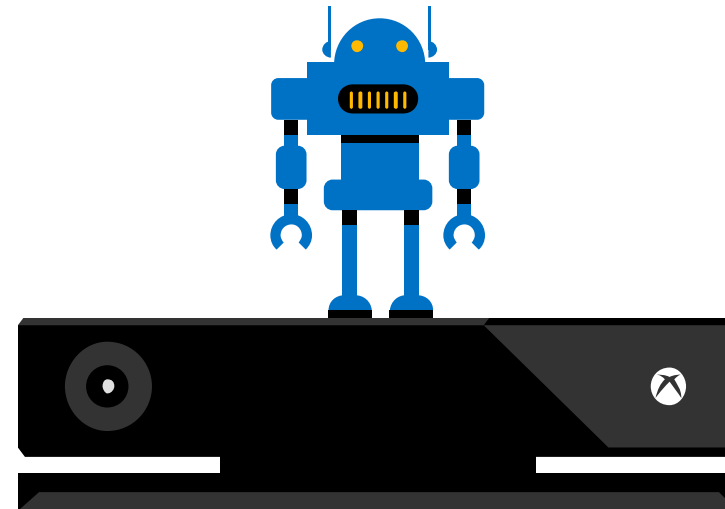


OTHER SENSORS

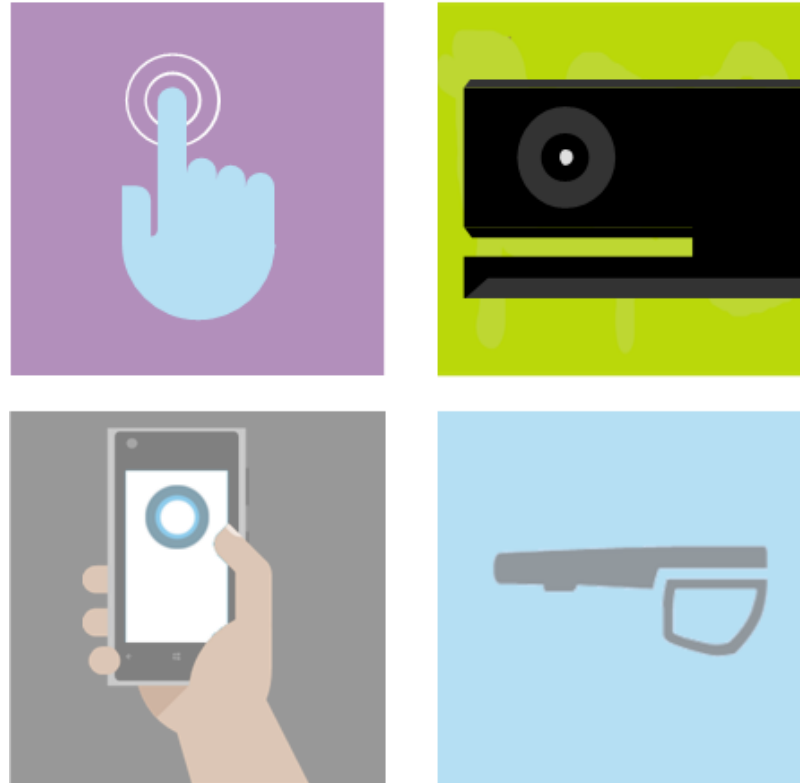
NUI-Technologien

Wie kann ich NUI entwickeln?

- Gesten-, Sprach- und Sicht-gesteuerte Apps mit Kinect
- Sprachaktivierung mit Cortana
- NUI für Augmented Reality mit HoloLens

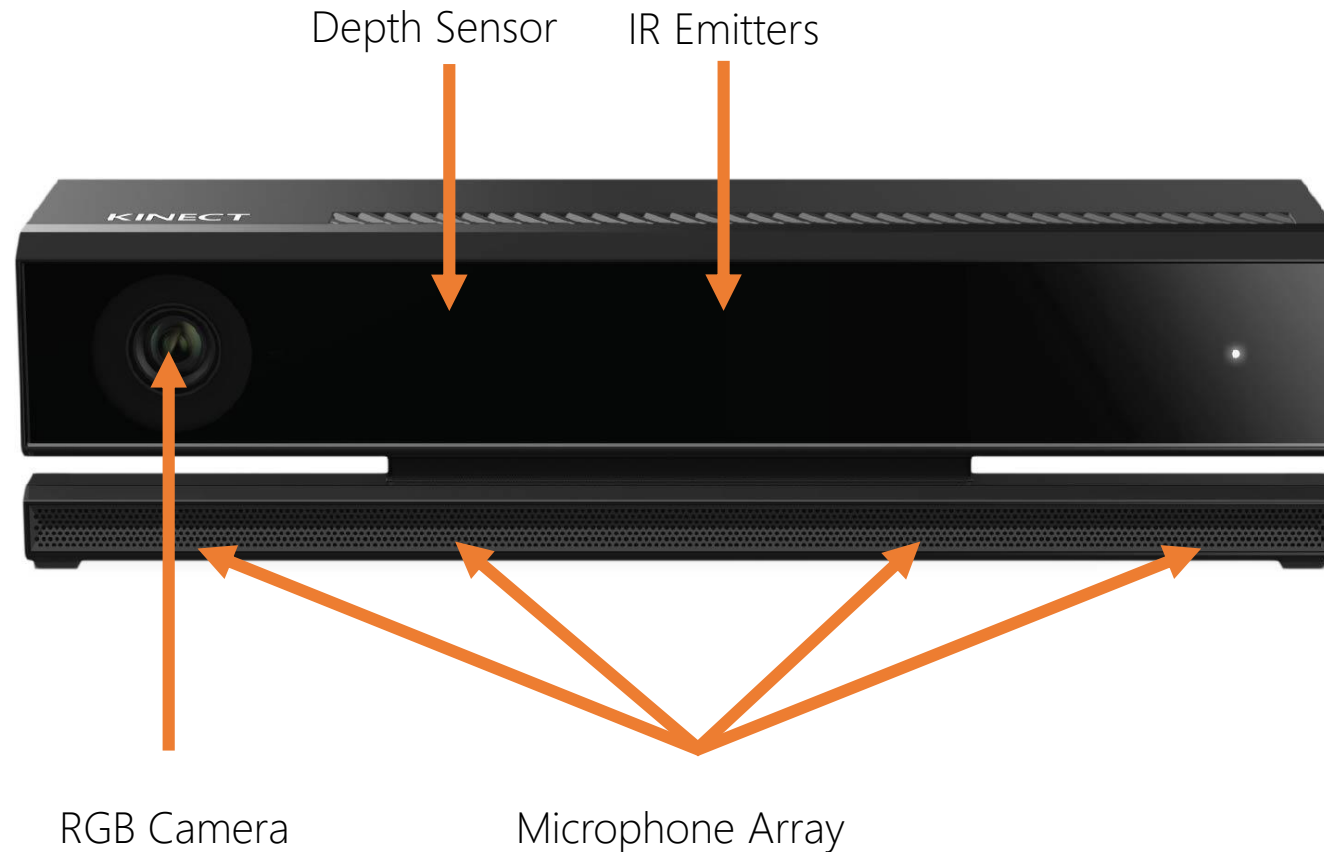


Kinect for Windows

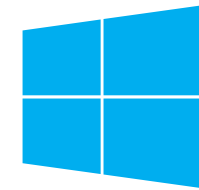
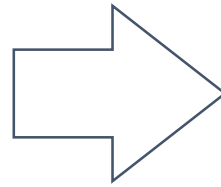


Kinect for Windows

Sensorkomponenten



Kinect for Windows



Kinect for Windows

Anwendungsfälle



Kinect for Windows

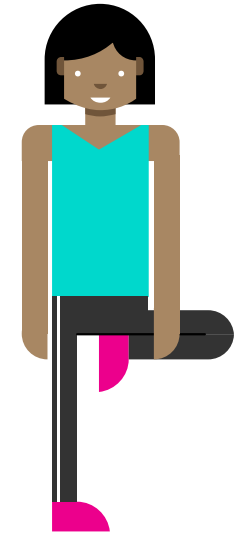
Eigene Gesten erstellen

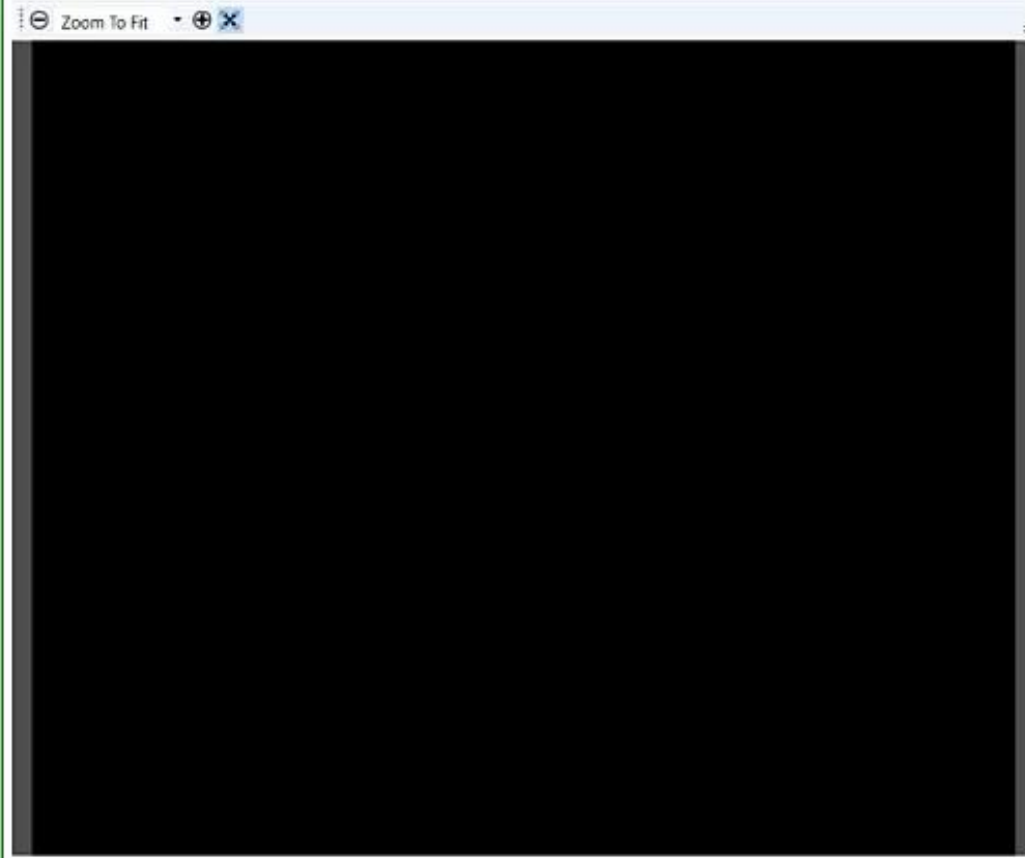
Kinect Studio

- Aufnahme u. Wiedergabe von Sensordaten

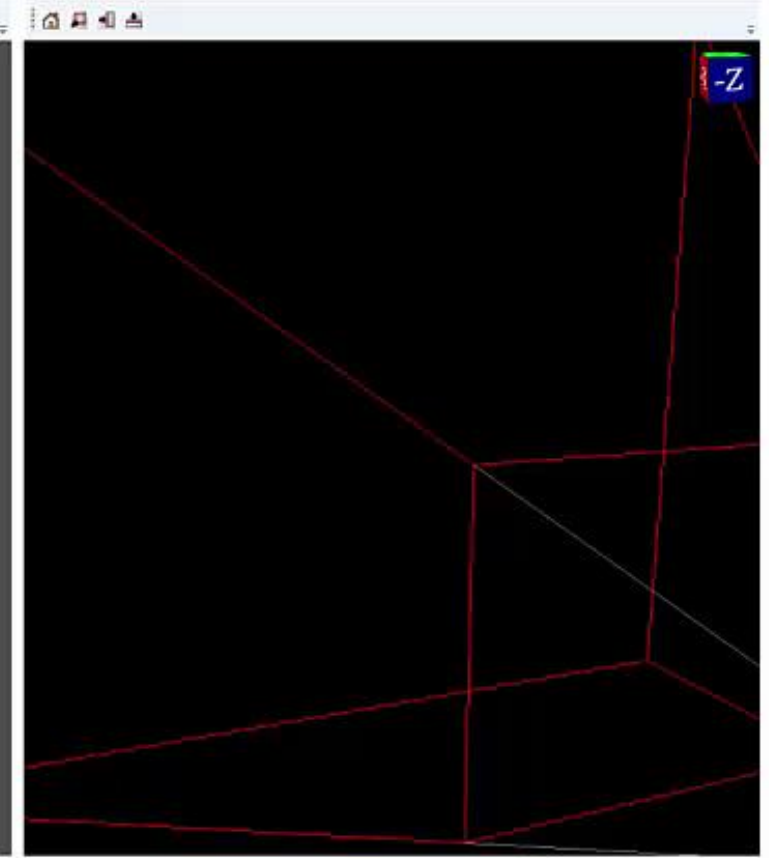
Gestenerkennung

- Heuristisch (im Code programmieren)
- Basierend auf Machine Learning Algorithmen (mit Visual Gesture Builder)

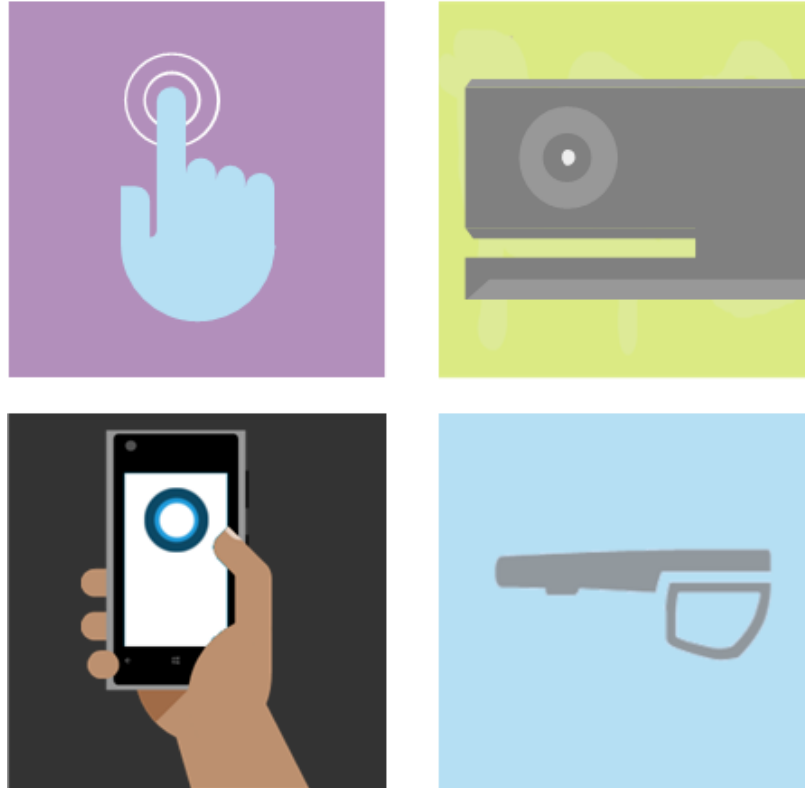




Control

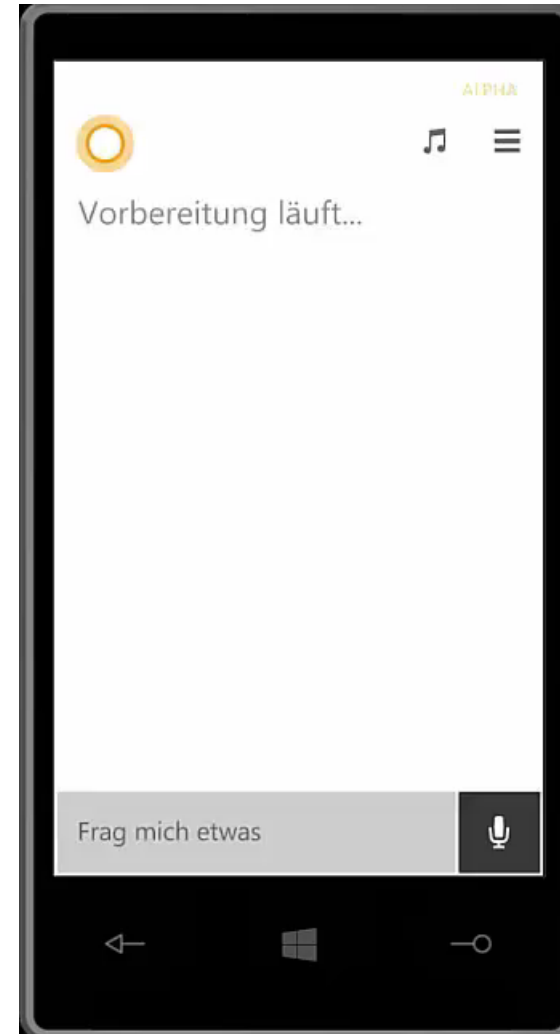


Cortana



Cortana

Die persönliche digitale Assistentin



Cortana

Verfügbare Features



Notebookfunktionalitäten



Kommunikation und Telefonie



Routenplanung und Geodienste



Smalltalk und Entertainment



Infodienste

Cortana



Cortana



Cortana



Cortana



Cortana

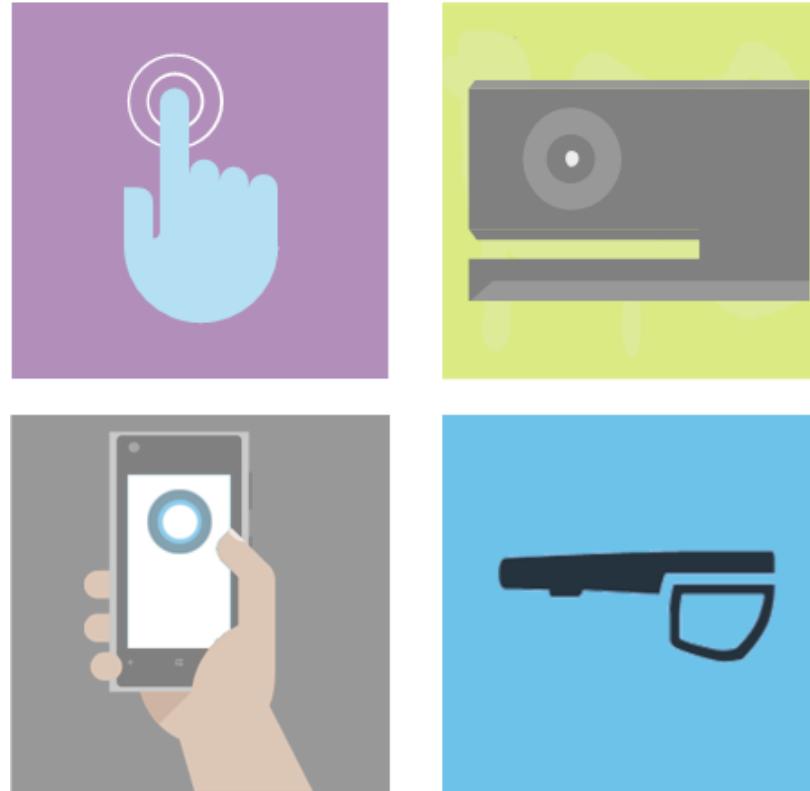
Integration in eigene Apps

- Erstelle Voice Command Definition(s)
- Registriere die Voice Command Definition(s) XML Datei
- Verarbeite die Voice Command Definition(s)





HoloLens





HoloLens



Die Welt mit anderen Augen sehen

- Holografischer Computer
- Windows 10
- Mehr Informationen auf der **//build** (29.04 – 01.05)

HoloLens

Weitere Informationen

Die Welt mit anderen Augen sehen

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 @nikk_mihali

 <http://aka.ms/languageoftech>

Kinect Kurs

<http://aka.ms/kinect-mva>

Microsoft Kinect SDK

<http://aka.ms/k4wv2PreviewSDK>

Voice Commands Quickstart

<http://aka.ms/voicecommands-quickstart>

Vielen Dank.

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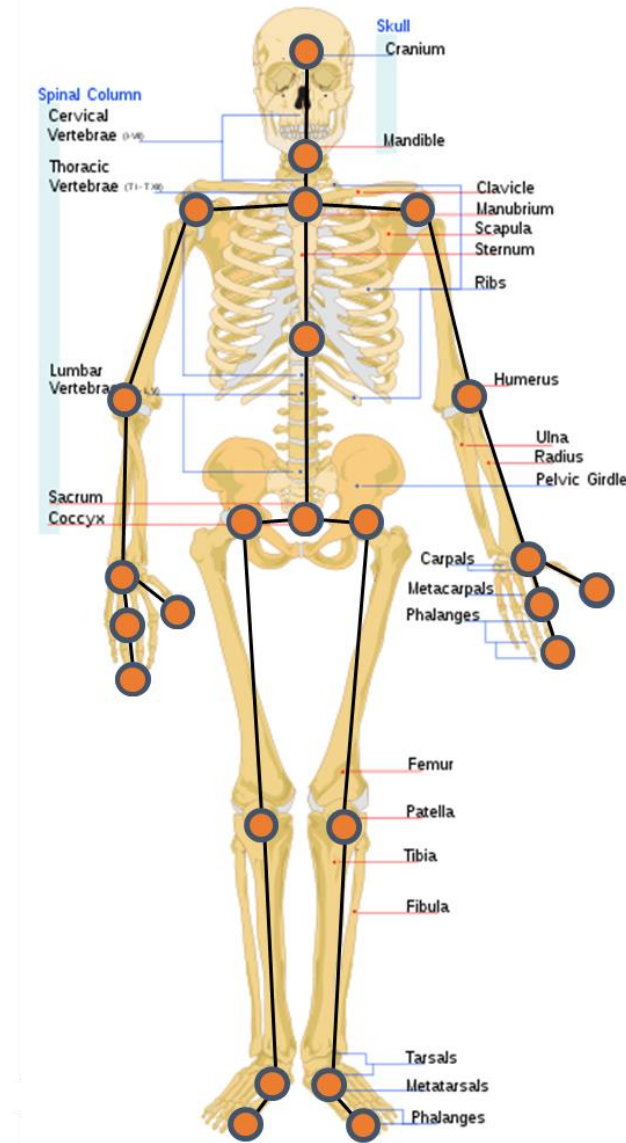
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Kinect for Windows

Features

- Größeres Sichtfeld
- 3x bessere Tiefensicht
- 1080p, HD Farbkamera (30fps)
- Lichtsituationunabhängiges IR (30 fps)
- Bessere Mikrofone
- 25 Gelenkpunkte für 6 Personen
- Handzustand
- Größeres Bereich-> .5M nah, 8M fern



Kinect for Windows

Data Sources

Color



Infrared



Depth



BodyIndex



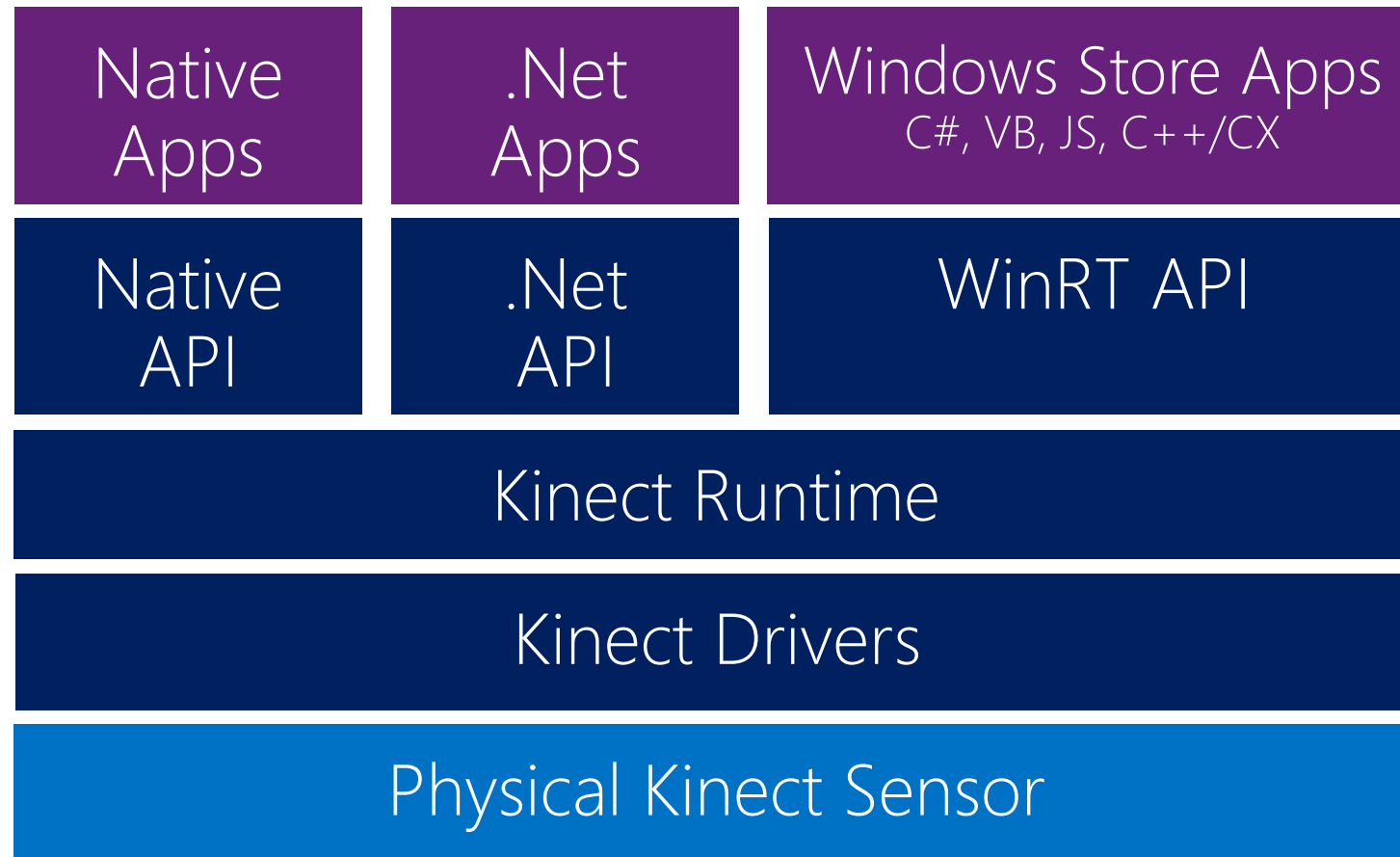
Body



Audio

Kinect for Windows

High-level Architecture



Cortana

Die persönliche digitale Assistentin

- Berät und fragt nach
- Schlägt vor (Predicted Search)
- Lernt dazu
- Erkennt natürliche Sprache
- Ist interaktiv und einfach zu nutzen
- Gibt jedem Nutzer die volle Kontrolle, über das was Cortana über ihn weiß.

Jeder App-Anbieter kann Cortana zum Teil seiner App machen!

