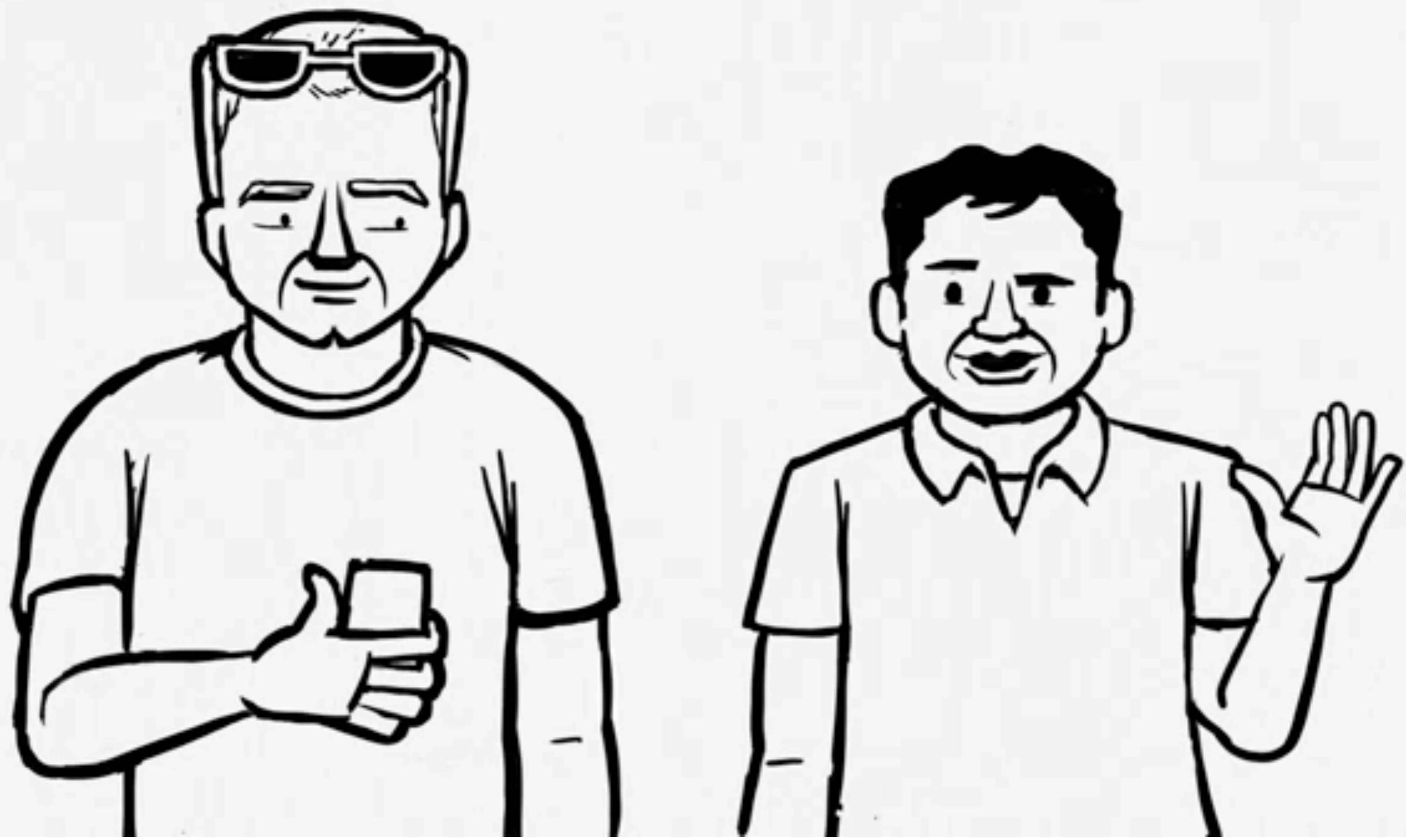




Applications of computer vision

Computer Vision

Carnegie Mellon University (Kris Kitani)



2009

Object Recognition



Toshiba Tech IS-910T

2013

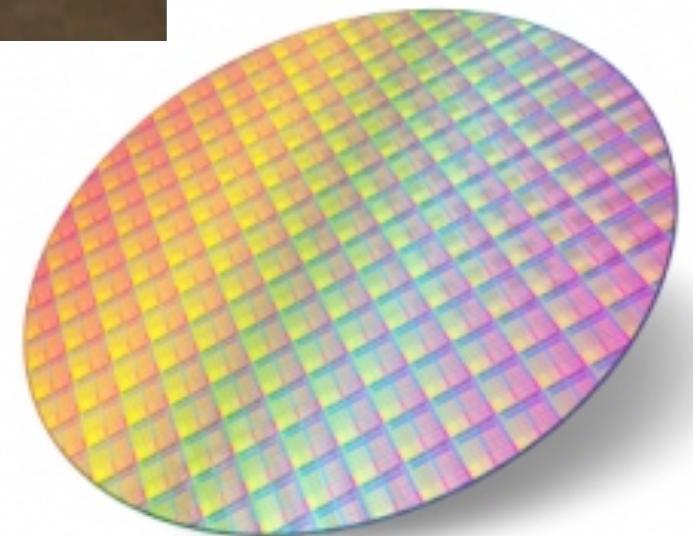


DataLogic LaneHawk LH4000

2012



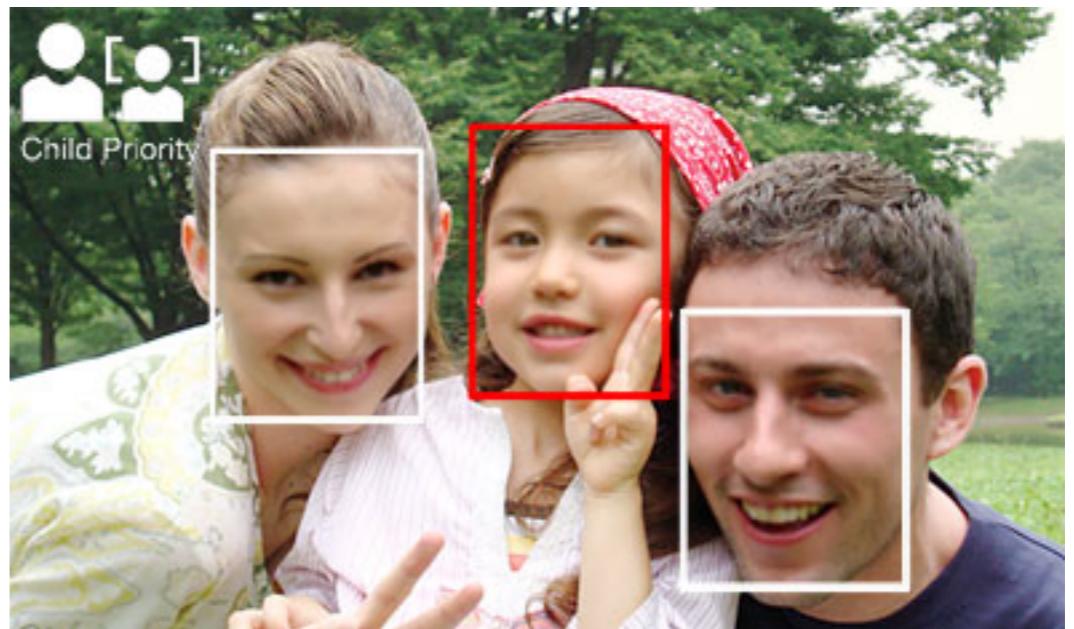
Automated visual inspection



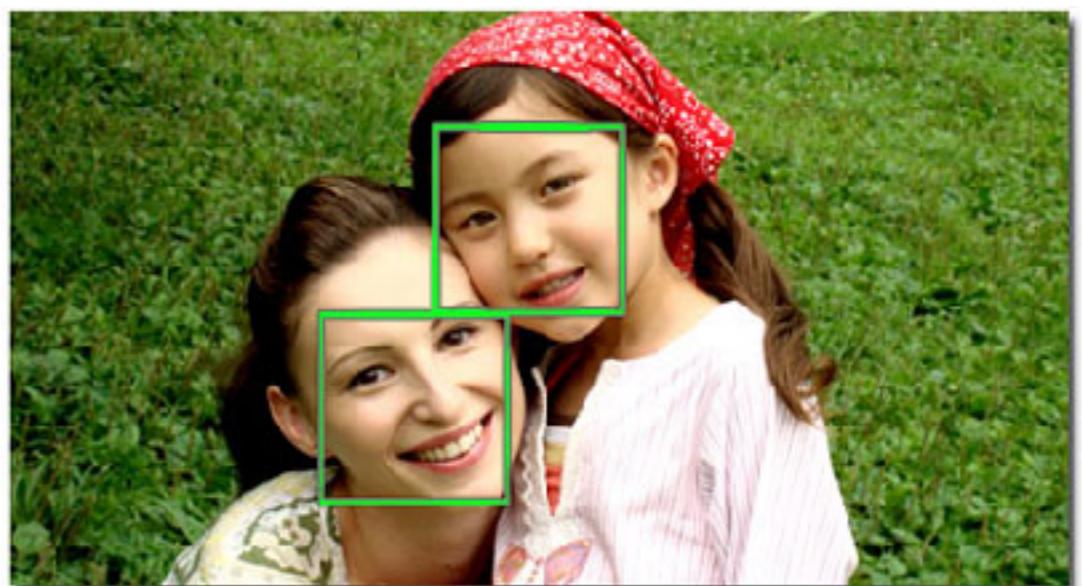
Face detection



Sony Cyber-shot



Age recognition



Smile recognition



skin filter



eye lash density

ミーハー女子♥3



Y BIJYO COCKTAIL 2



La *femme*



OH ♥ MY GIRL
MAKE NEW BEAUTY HAPPEN



Y Bijyo Cocktail



XOXO...♥2



leafsnap

Verizon 12:38 PM 12:20 PM 100%

Back Results Map i

Snap It! Results

1 Red Maple
Acer rubrum

2 Striped Maple
Acer pensylvanicum

3 Sycamore Maple
Acer pseudoplatanus

First Last Scientific i

Ilex opaca

American Hornbeam
Carpinus caroliniana

American Linden
Tilia americana

American Sycamore
Platanus occidentalis

Amur Corktree
Phellodendron amurense

Home Browse Collection Options Snap It!

Q A B C D E F G H J K L M N O P Q R S T U W Y



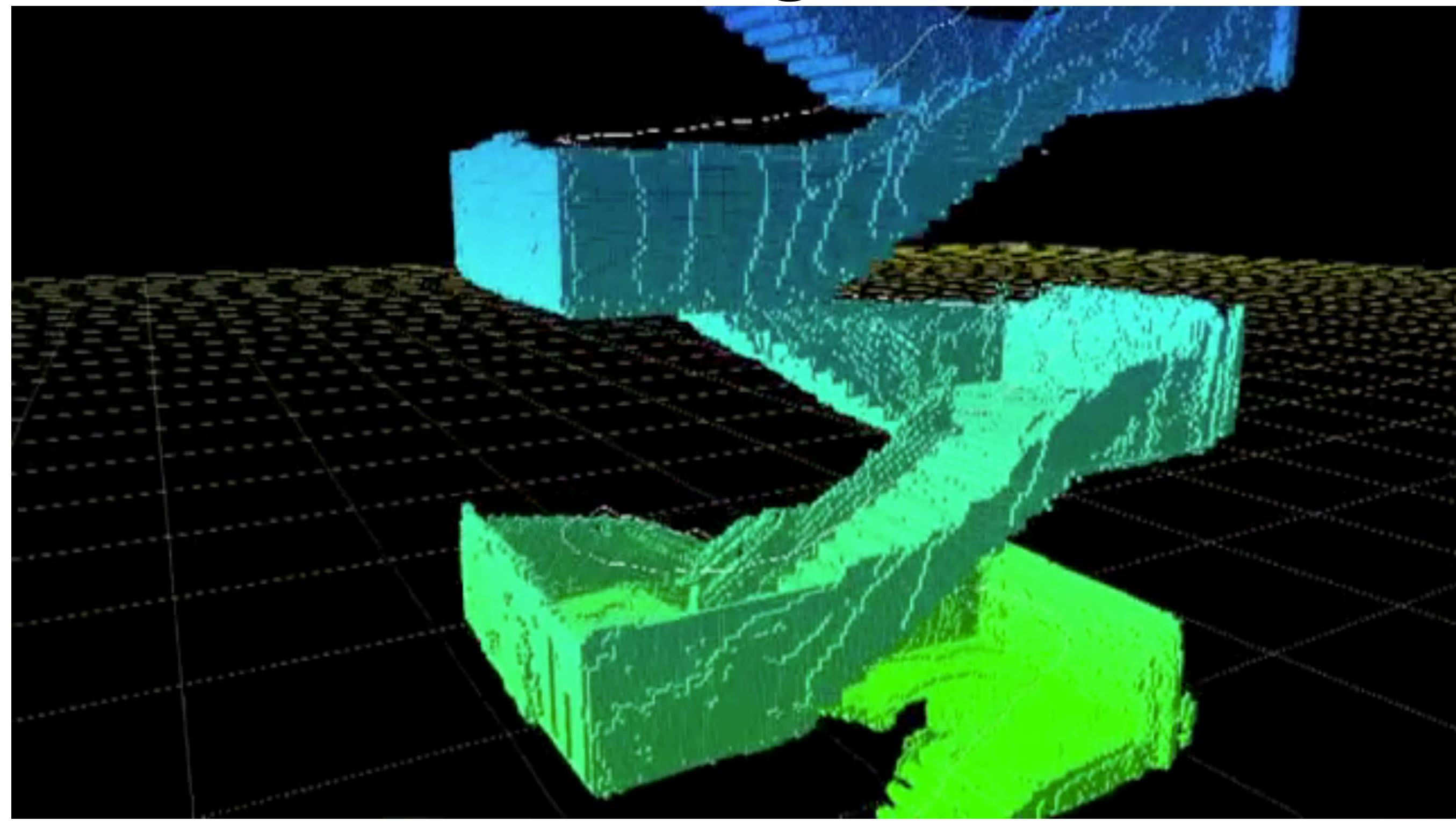
Word Lens



Word Lens

www.QuestVisual.com

Tango



Computer Vision for VR



2015

Vision in Cars





Facebook video style transfer 2016

Face2Face: Real-time Face Capture and Reenactment of RGB Videos

*Justus Thies¹, Michael Zollhöfer²,
Marc Stamminger¹, Christian Theobalt²,
Matthias Nießner³*

¹University of Erlangen-Nuremberg

²Max-Planck-Institute for Informatics

³Stanford University

CVPR 2016 (Oral)

Object Recognition 2017

clarifai

<https://www.youtube.com/watch?v=qRLRn505Jwl>

CVPR 2017

**Real-time Multi-Person 2D Pose Estimation
Using Part Affinity Fields**

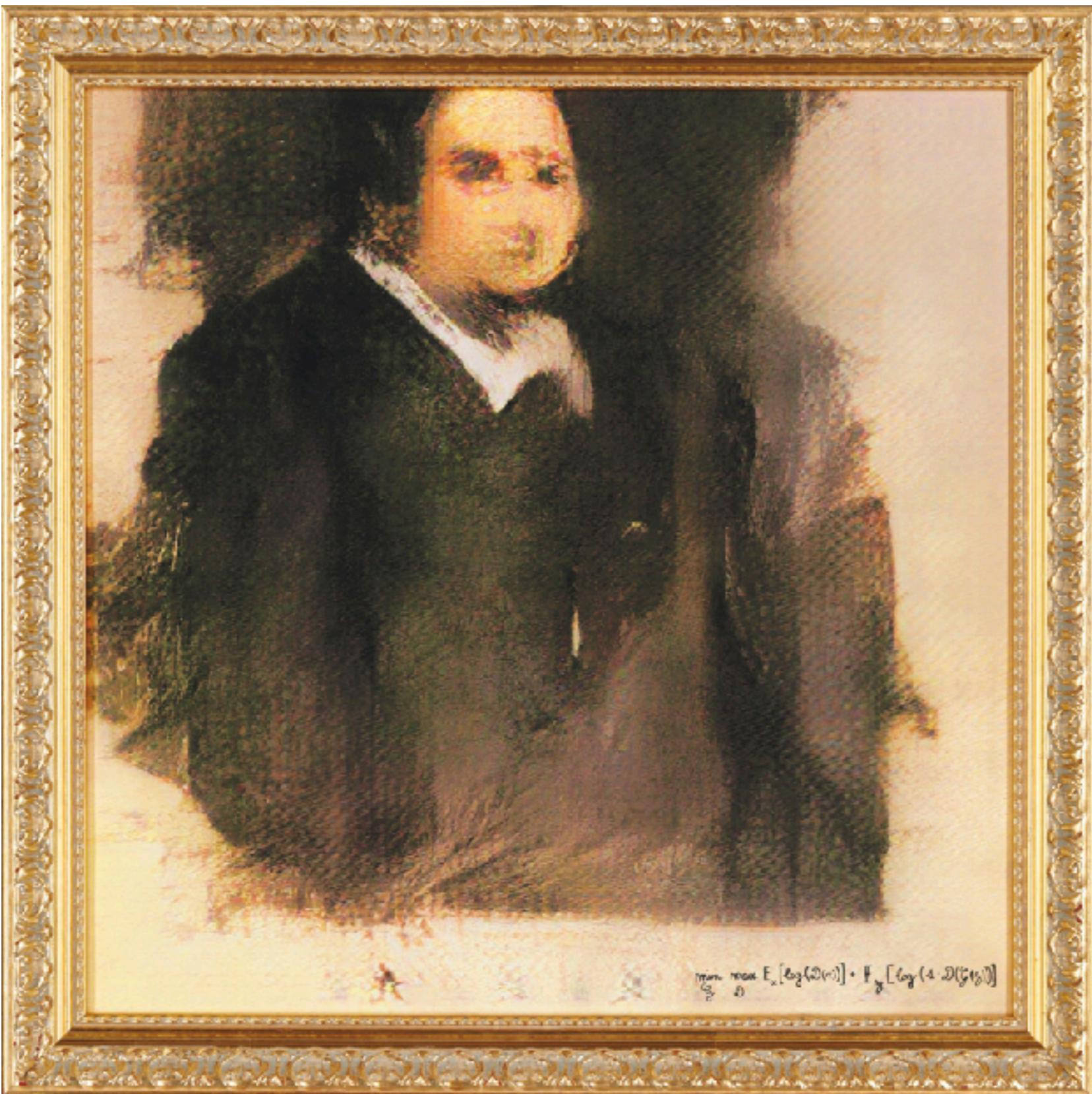
Zhe Cao, Tomas Simon, Shih-En Wei, Yaser Sheikh
Carnegie Mellon University

<https://www.youtube.com/watch?v=pW6nZXeWIGM>

Released Jan 2018 from NVIDIA



<https://www.youtube.com/watch?v=Sm-NBdSzP6E>



Portrait of Edmond Belamy, 2018, created by GAN (Generative Adversarial Network).
Sold for \$432,500 on 25 October at Christie's in New York.

<https://www.thispersondoesnotexist.com/>



CVPR 2019



Interactive Demo

Semantic Image Synthesis with Spatially Adaptive Normalization
CVPR 2019



Learning 3D Human Dynamics from Video

Angjoo Kanazawa*, Jason Zhang*, Panna Felsen*, Jitendra Malik

UC Berkeley



With audio narration

* Equal contribution

***just body**

Monocular Total Capture: Posing Face, Body, and Hands in the Wild

Donglai Xiang, Hanbyul Joo, Yaser Sheikh
Carnegie Mellon University

***face, body and hands**

Learning Depths of Moving People by Watching Frozen People

Zhengqi Li Tali Dekel Forrester Cole Richard Tucker
Noah Snavely Ce Liu William T. Freeman

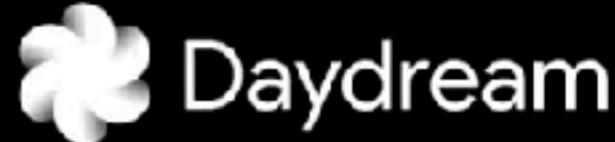


Google Research

Best Paper Honorable Mention

DeepView: View synthesis with learned gradient descent

John Flynn, Michael Broxton, Paul Debevec, Matthew DuVall, Graham Fyffe,
Ryan Overbeck, Noah Snavely, Richard Tucker

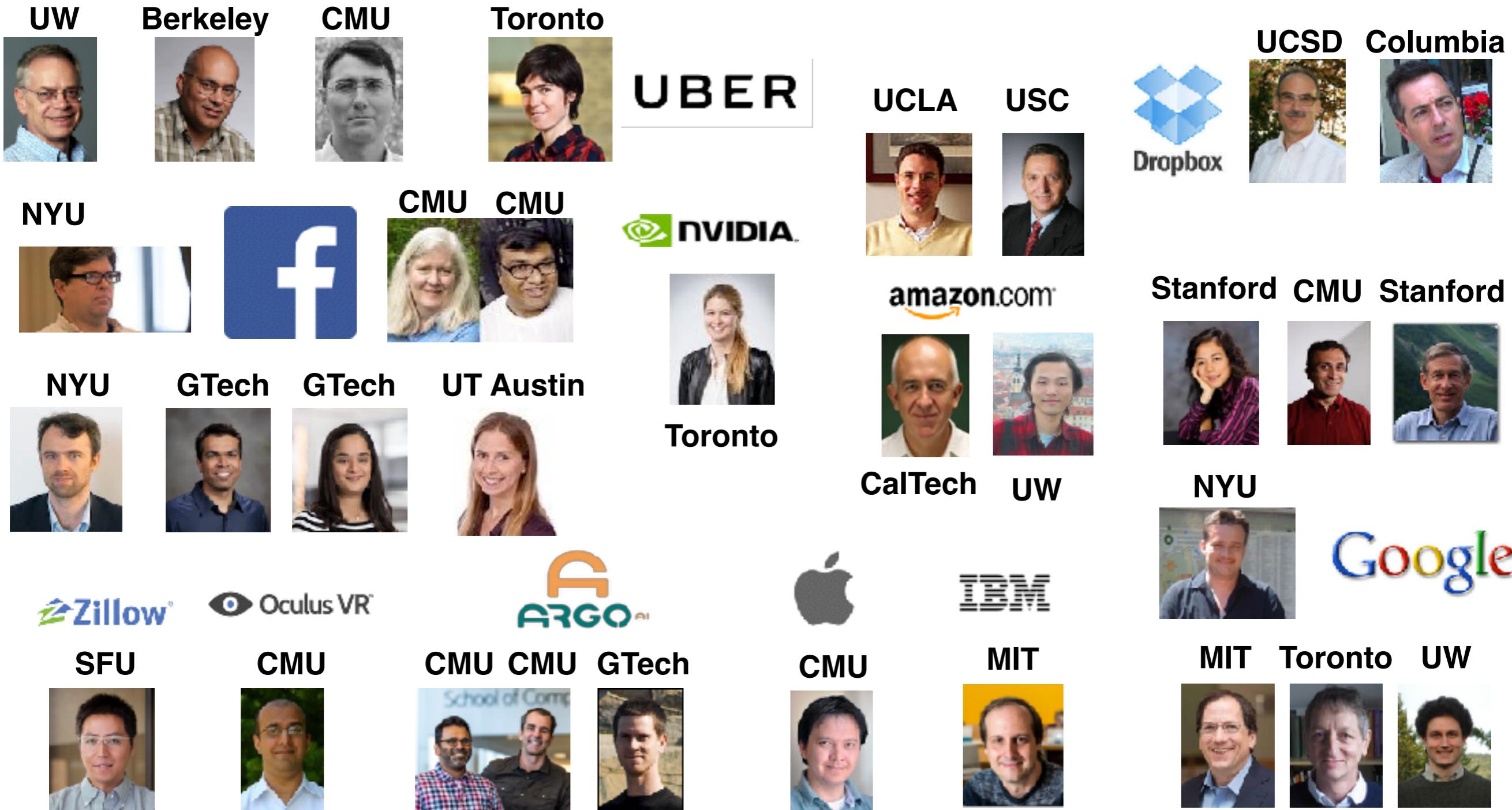


CVPR 2019

Results

Computer Vision Explosion

Industry aggressively hiring CV faculty from universities



9x growth in 10 years

