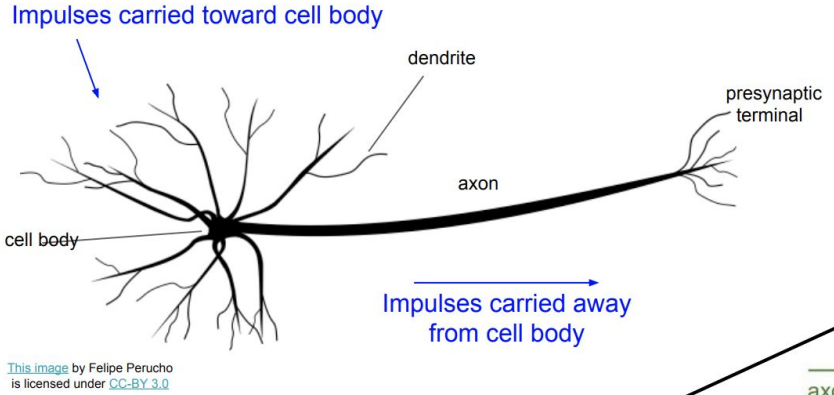
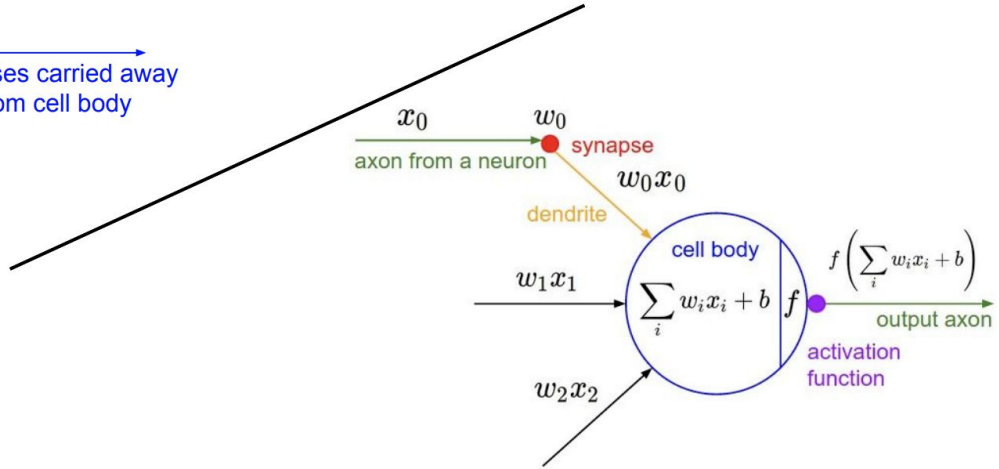
AI Applications

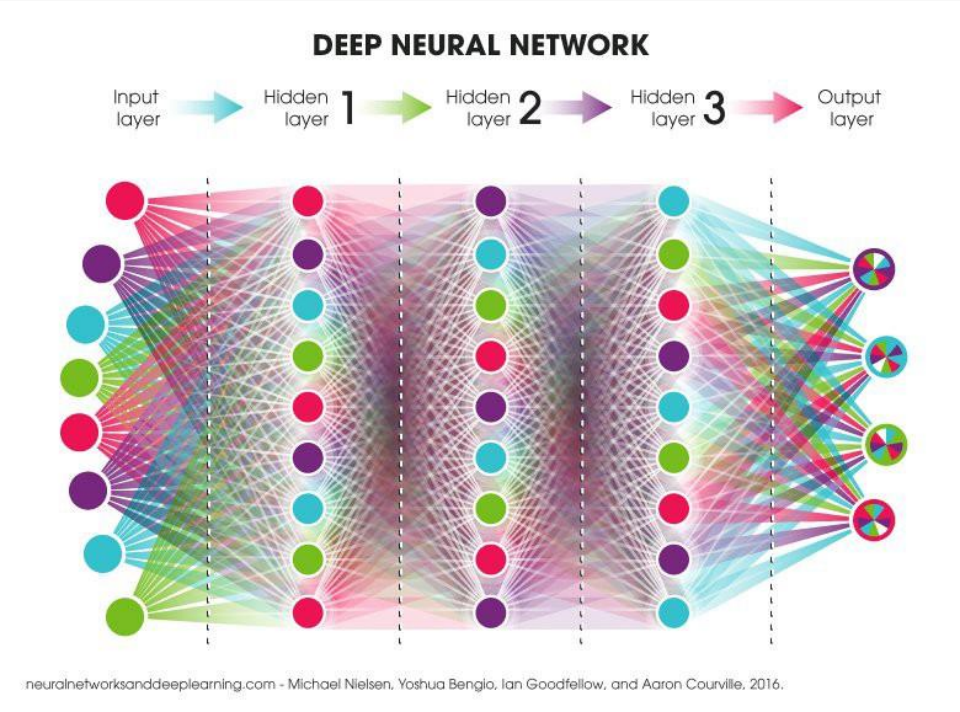
Modern applications of Artificial Intelligence

Artificial Neuron



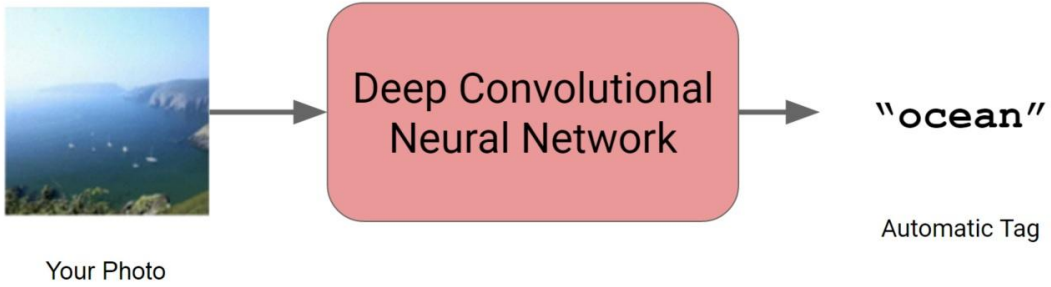


Artificial Neural Network - Deep Learning



Automatic Image Tagging

Google Photos Search



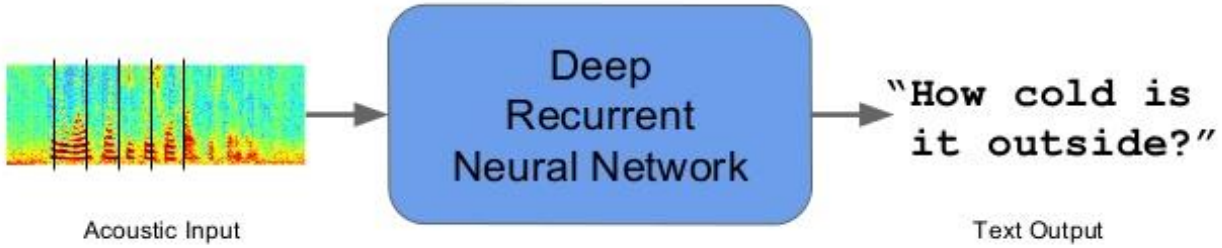
Search personal photos without tags.

Google Research Blog - June 2013

Research at Google

Speech to Text

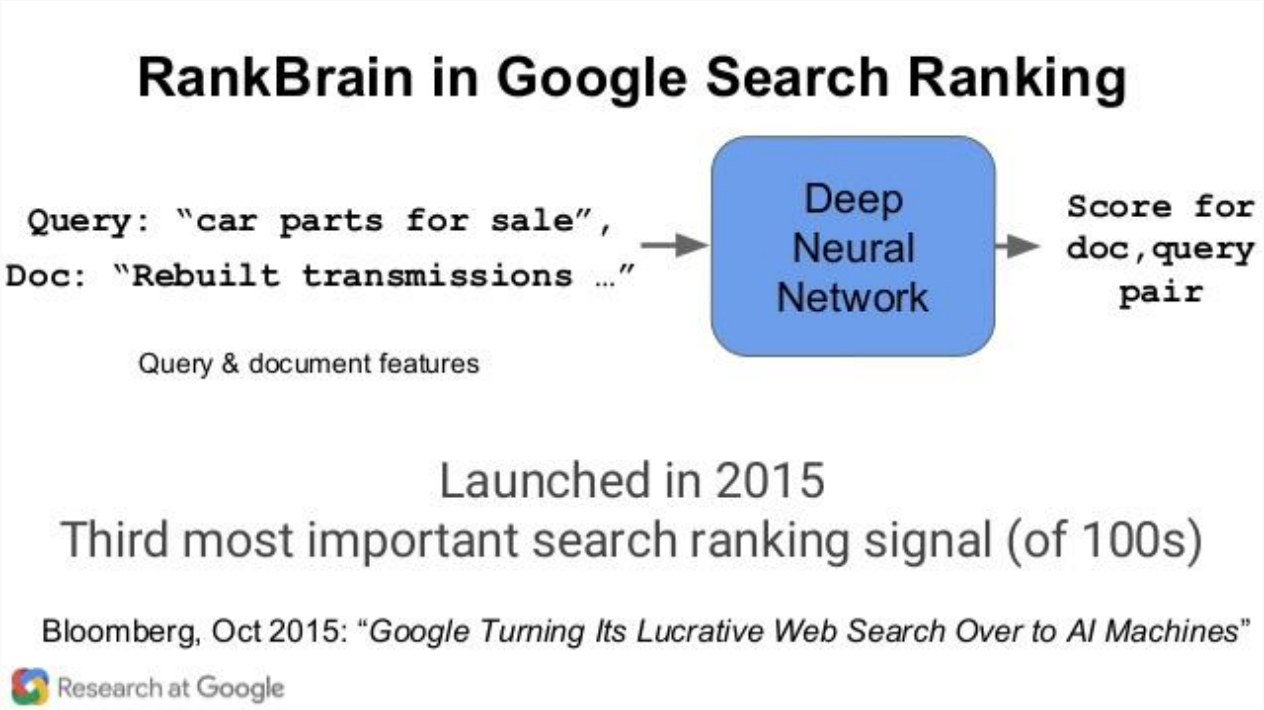
Speech Recognition



Reduced word errors by more than 30%

Google Research Blog - August 2012, August 2015

Page Ranking



Auto Reply

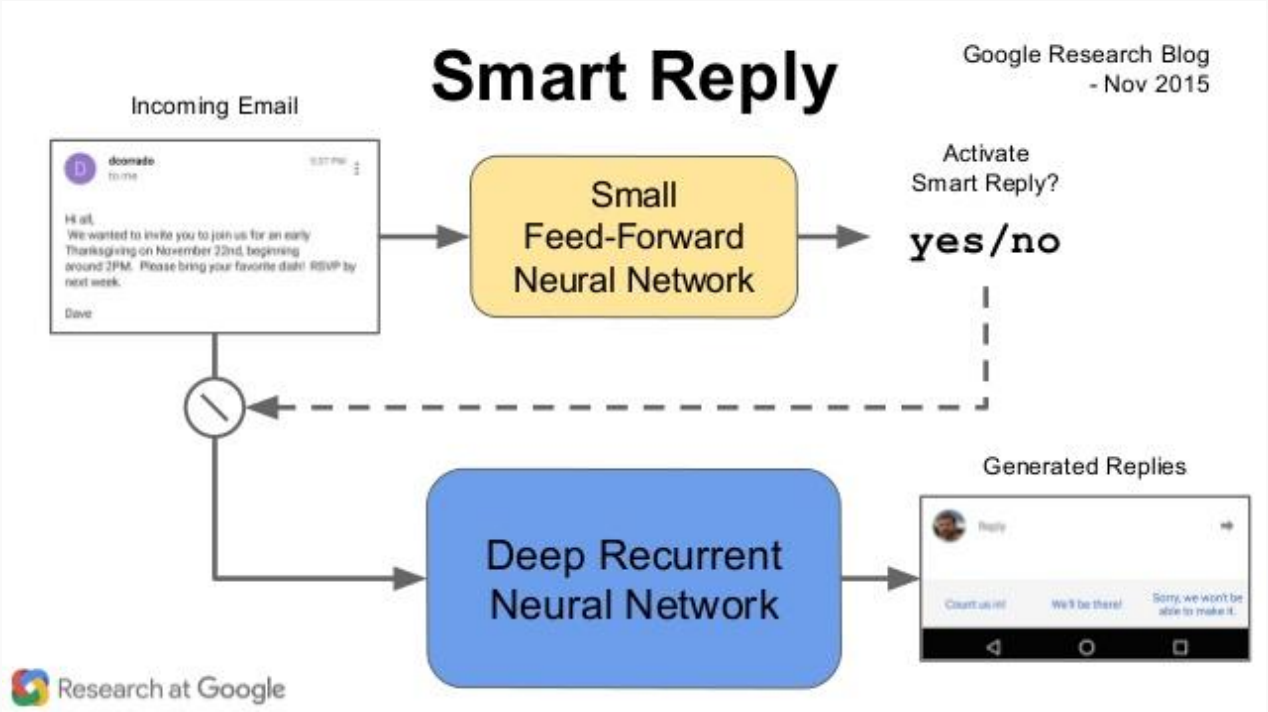

Smart Reply
Google Research Blog
- Nov 2015
Incoming Email
Hi all,
We wanted to invite you to join us for an early Thanksgiving on November 22nd, beginning around 2PM. Please bring your favorite dish! RSVP by next week.
Dave
Small
Feed-Forward
Neural Network
Activate
Smart Reply?
yes/no
Deep Recurrent
Neural Network
Generated Replies
Research at Google

Image Captioning

Generating Image Captions from Pixels

Human: A young girl asleep on the sofa cuddling a stuffed bear.

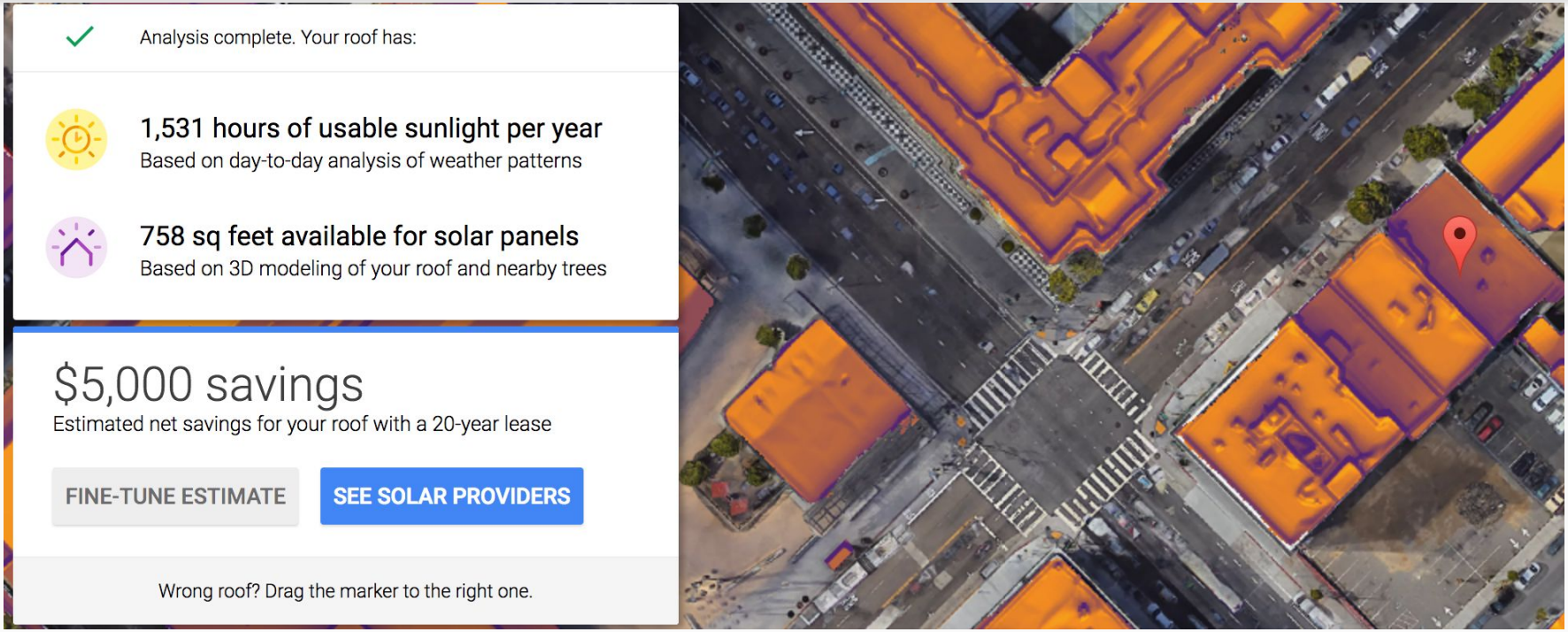
Model sample 1: A close up of a child holding a stuffed animal.

Model sample 2: A baby is asleep next to a teddy bear.

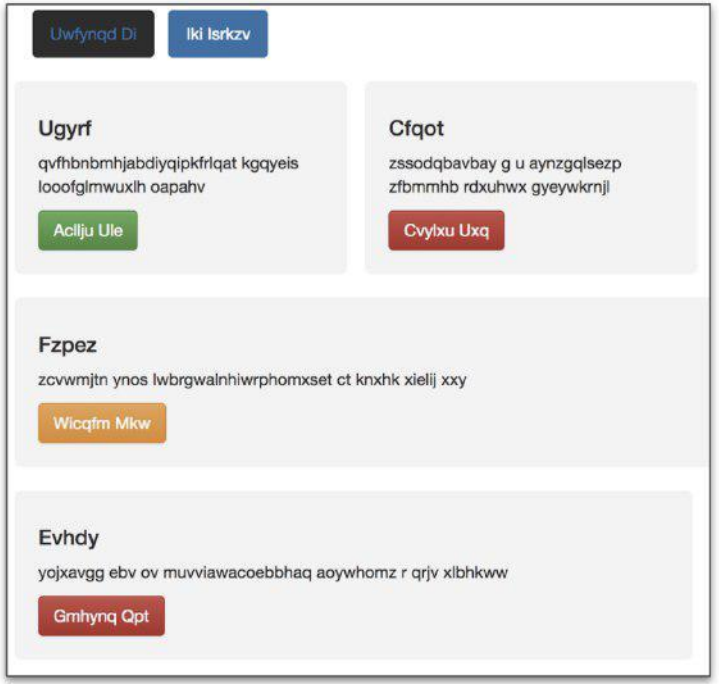
Google

Work in progress by Oriol Vinyals *et al.*

Estimate solar savings potential



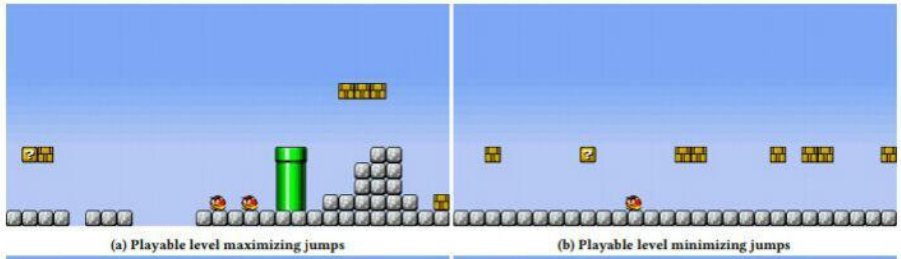
Front-end Development



Self-driving Cars

Generate New Game Levels

Figure 6: Level with increasing difficulty. Our LVE approach can create levels composed of multiple parts that gradually increase in difficulty (less ground tiles, more enemies). In the future this approach could be used to create a level in real-time that is tailored to the particular skill of the player (dynamic difficulty adaptation).



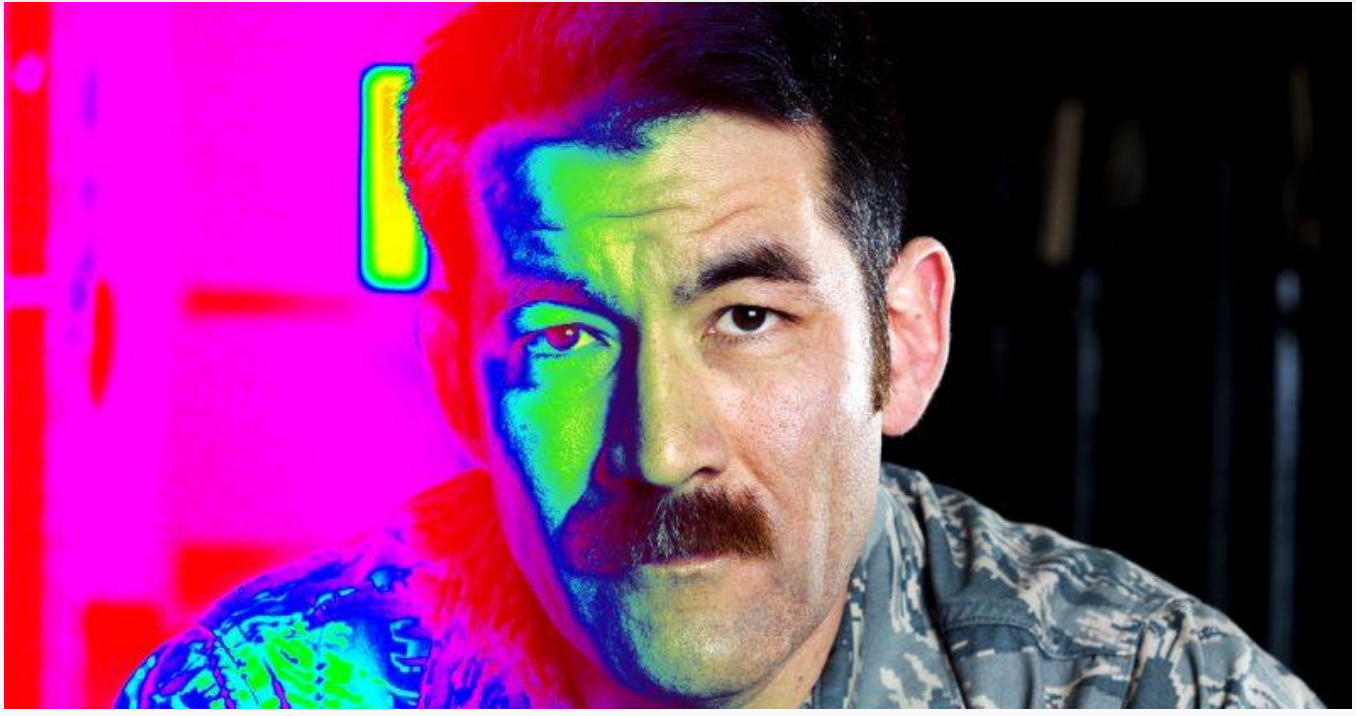
(a) Playable level maximizing jumps

(b) Playable level minimizing jumps

(c) Unplayable level

(d) Broken titles

Recognize faces in the dark and through walls



Deep Painterly Harmonization

Style Transfer

1 **Upload photo**

The first picture defines the scene you would like to have painted.

2 **Choose style**

Choose among predefined styles or upload your own style image.

3 **Submit**

Our servers paint the image for you. You get an email when it's done.

Style Transfer

Deep Style

Play ATARI Games

Play Board Games

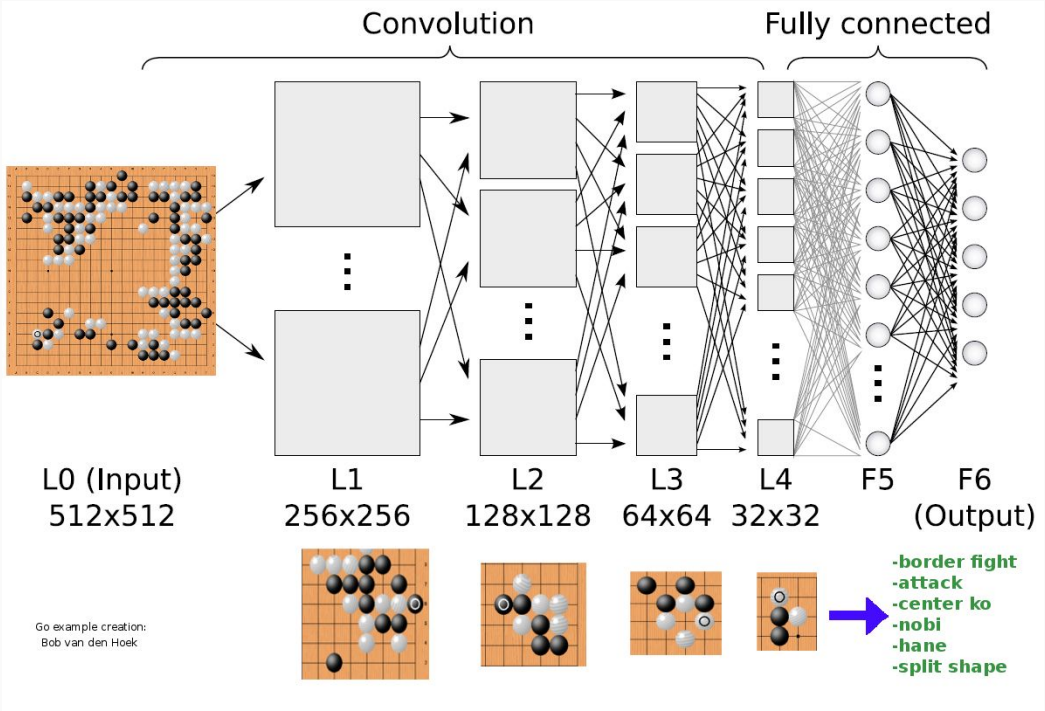
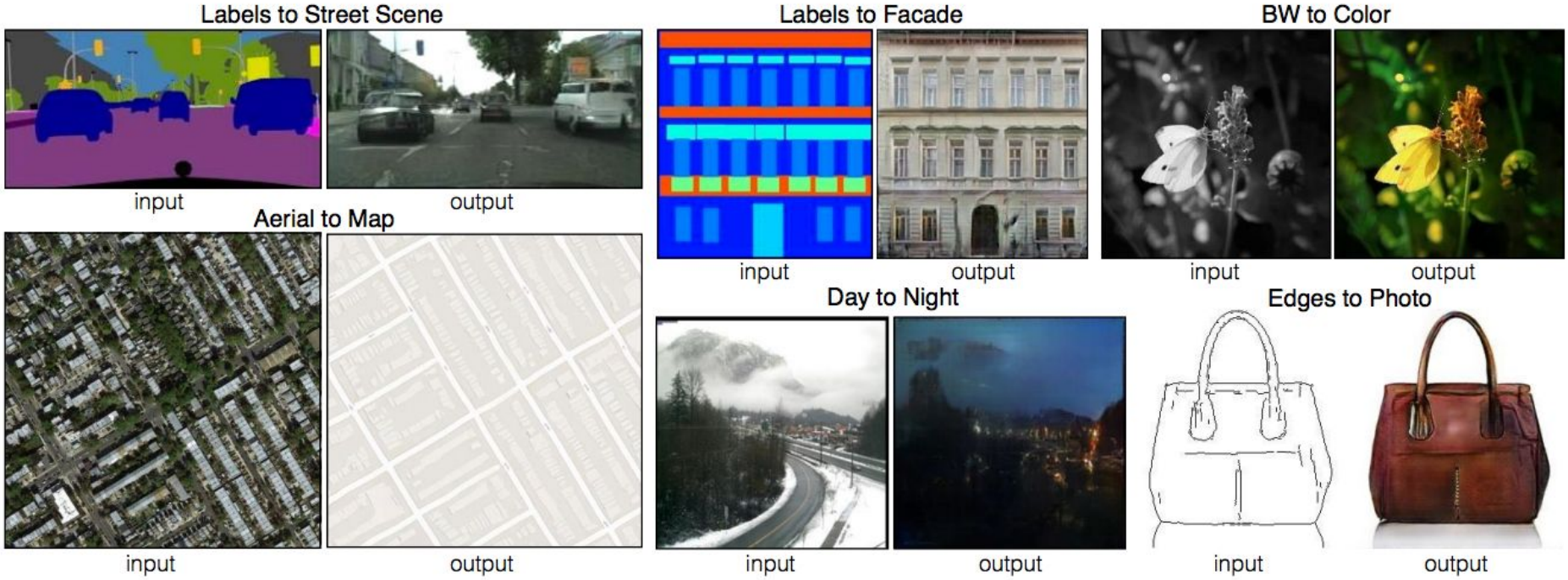
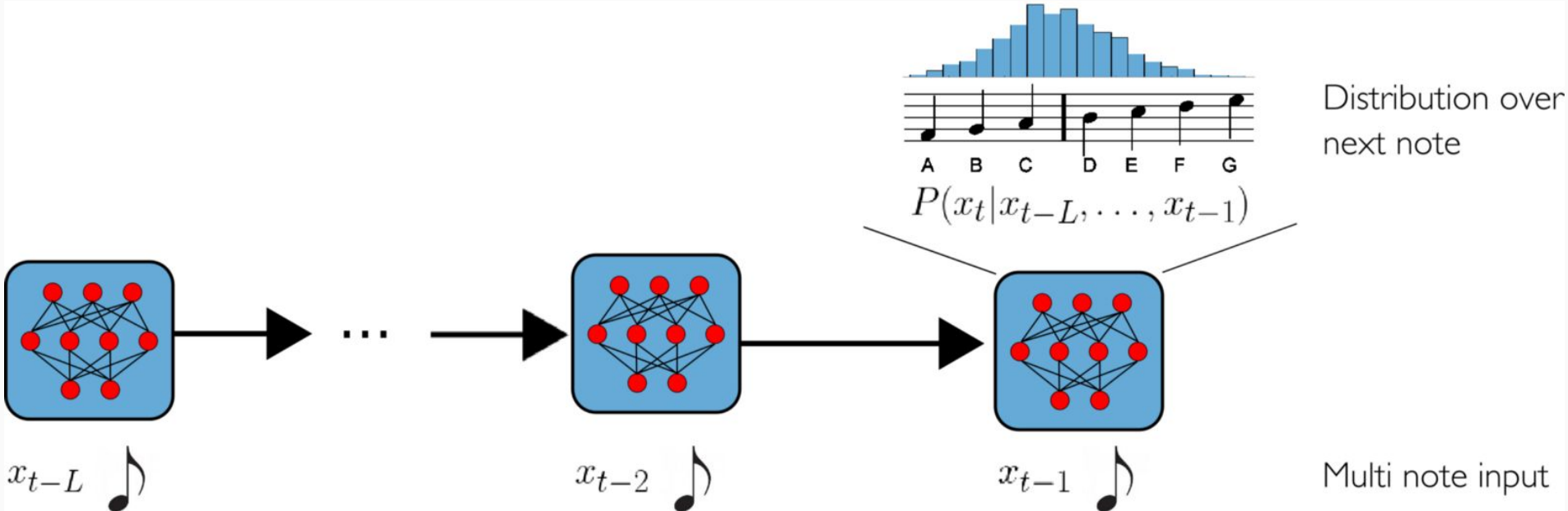


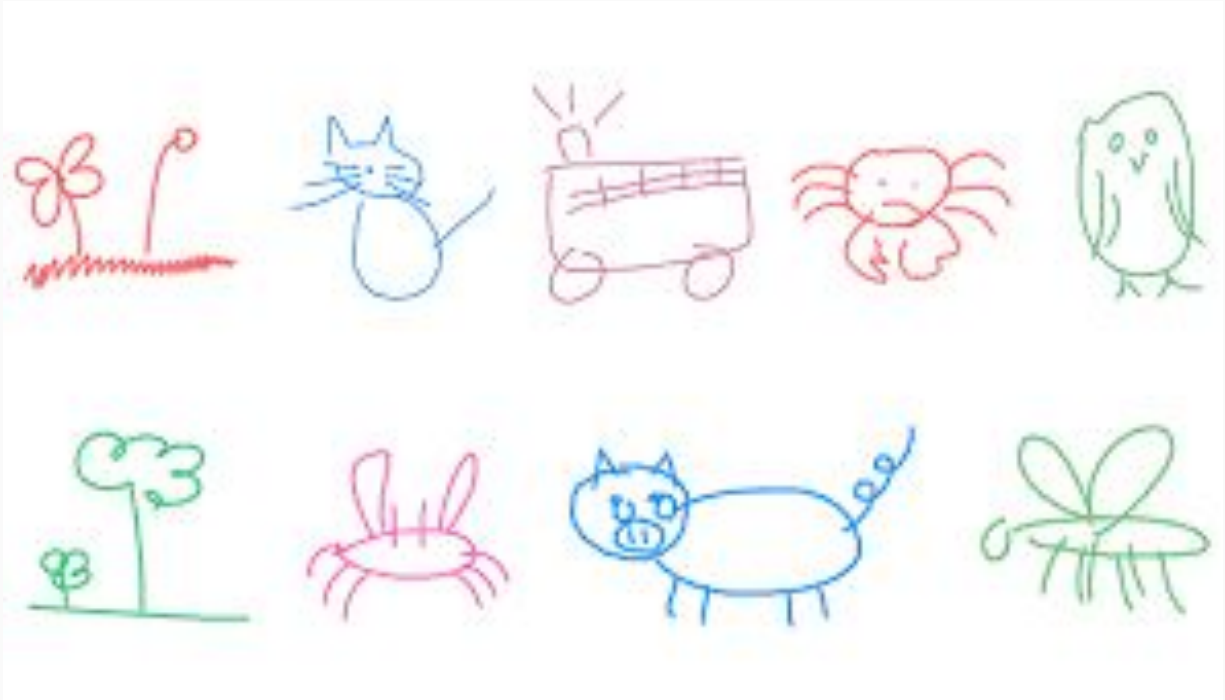
Image Generation



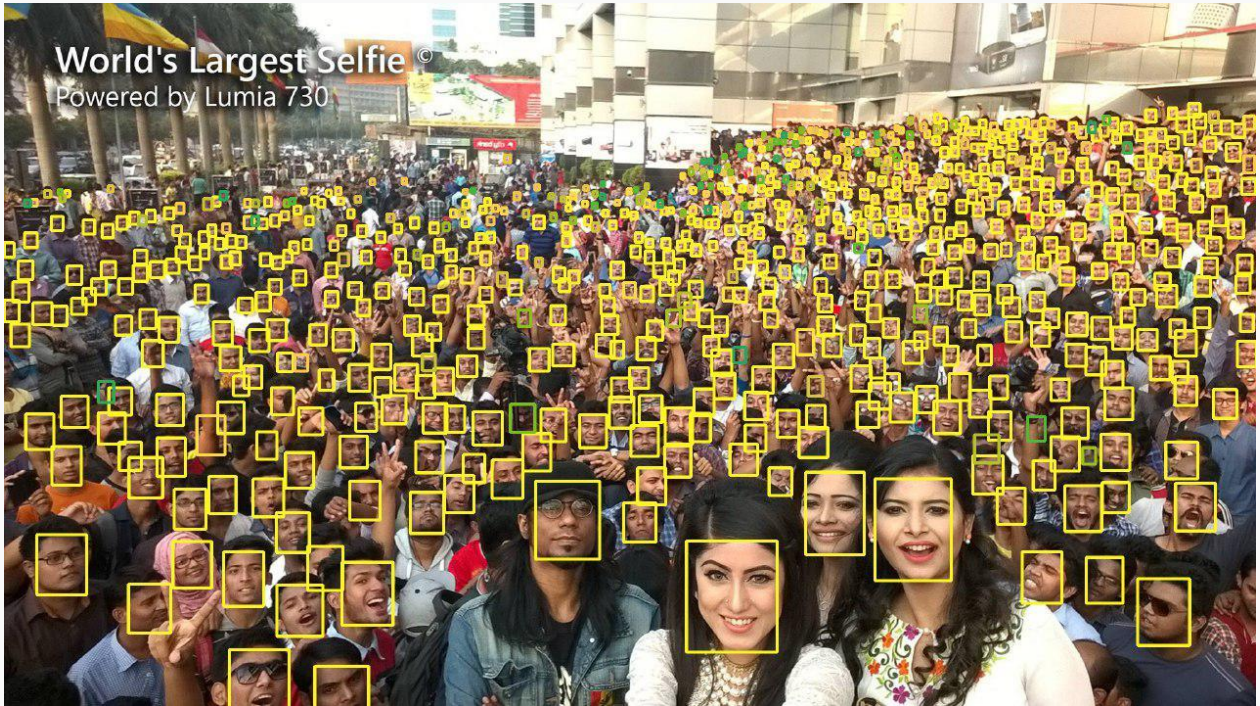
Music Generation



Drawing



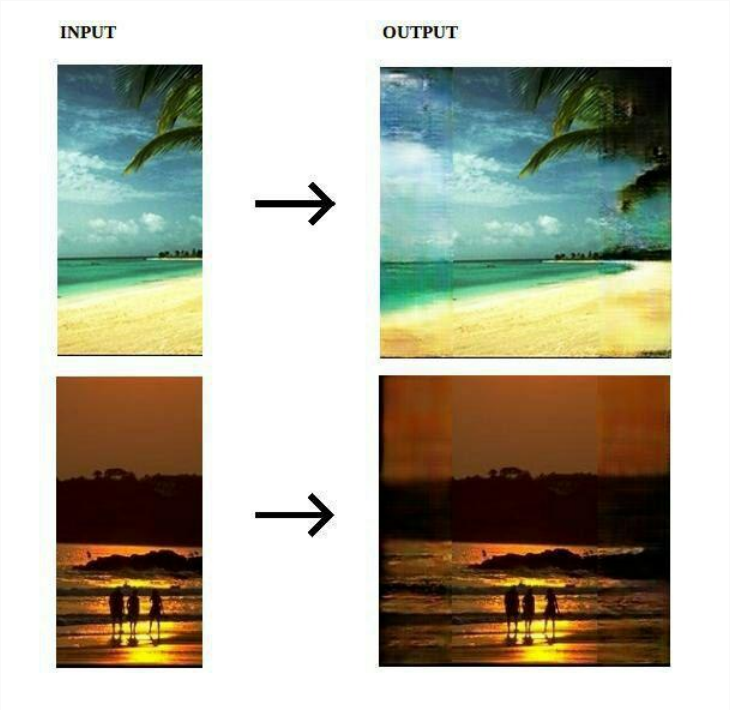
Finding Tiny Faces



Google Duplex

Image Inpainting

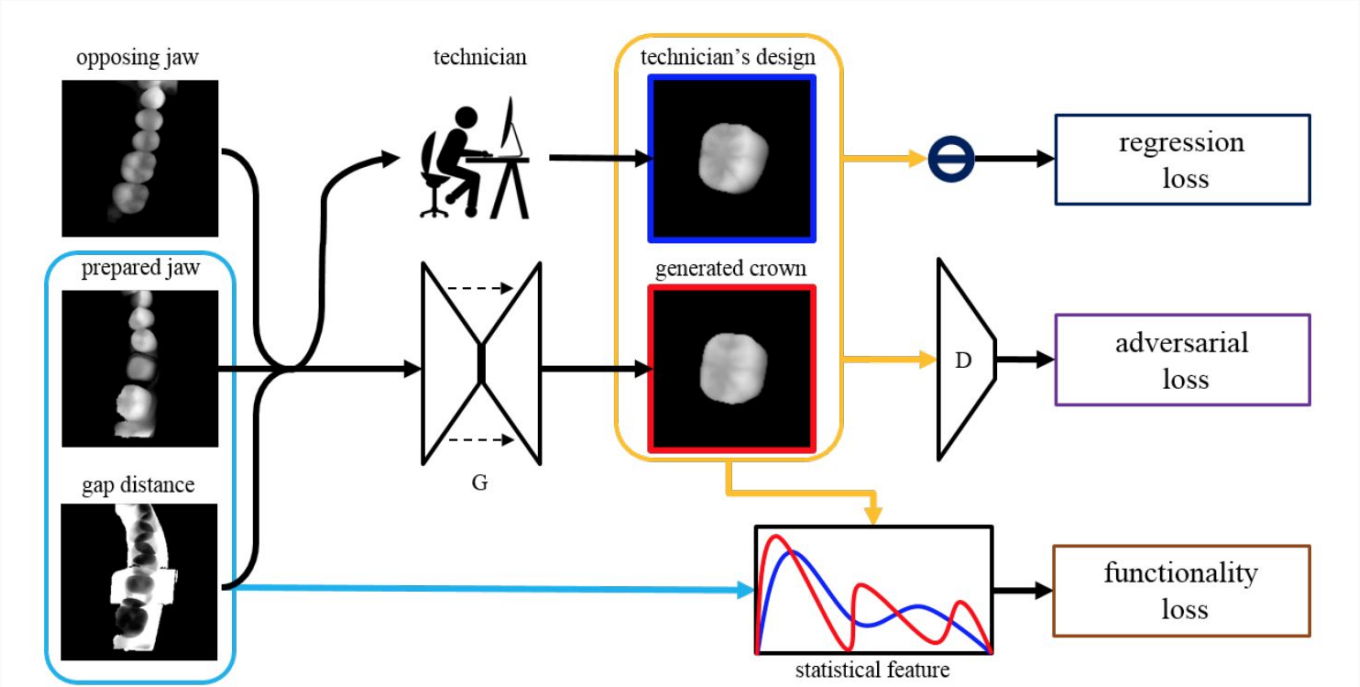
Image Outpainting



Eye-opener

Raindrop Removal from a Single Image

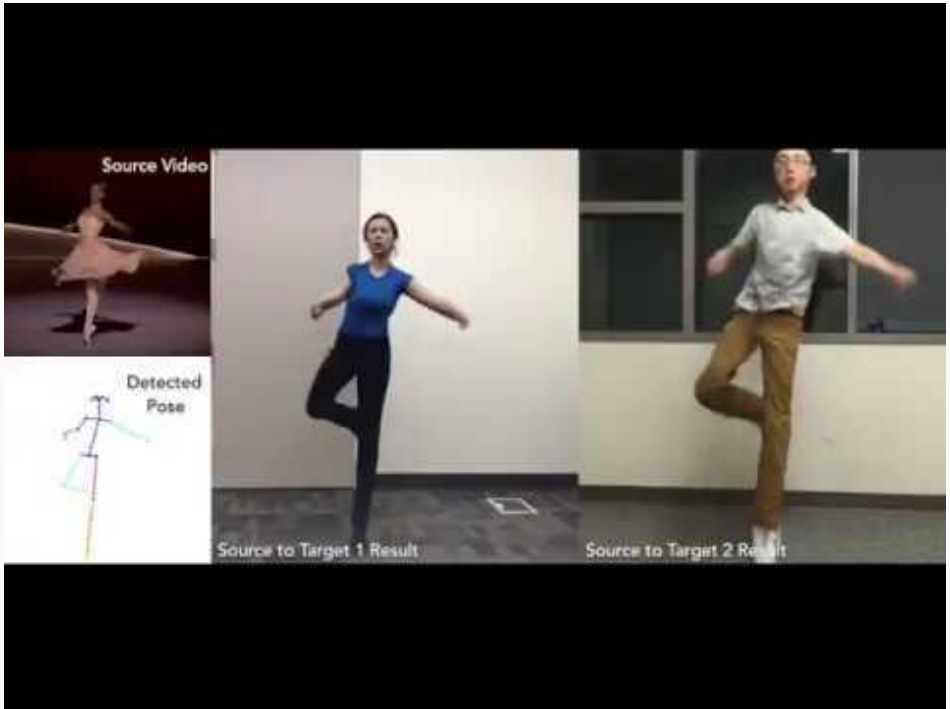
Design Dental Crowns



Learning Lip Sync from Audio

Move Mirror

Everybody dance now!



Play Dota 2

Thank You!