



Technology Enables Facial Recognition at Scale

INDUSTRY : Technology and Software

Background

Facial recognition, which allows networks to intelligently identify human faces and distinguish them from the crowd, offers promise for authentication, fraud, customer identification, surveillance and a wide variety of other implementations. Machines first identify human faces and then categorize them against a vast database of images – a complex process that requires substantial processing power, time and cost to achieve.

Challenge

Though facial recognition presents a multitude of opportunities for business, adoption at scale has been limited due to unreliable and ineffective technology. Historically, facial recognition has been successful only when comparing similar images and faces. Small changes, such as lighting, facial expression or image angle, can cause the technology to fail.

Compounding the challenge is the cost and complexity of capturing, storing and analyzing the images needed for accurate facial recognition. From the devices capturing the data to the servers processing and distinguishing human faces, the complex data pipeline required and the associated cost of this technology are barriers for many businesses.

Solution

To solve these challenges, the PK team developed a Proof of Concept that substantially increases accuracy while reducing the complexity and cost of facial recognition. Using a new Google-developed technique, PK's solution can achieve close to 100 percent accuracy[1] and even distinguish between similar looking faces. With a compact design, the PK solution can enable facial recognition in smart cameras and other small, low-power IoT-connected devices, lowering the cost to implement and reducing the processing pipeline. PK's facial recognition solution also lowers program maintenance costs with autonomous updating where connectivity is available.

While the computing power required for image processing is typically a major challenge, PK's Proof of Concept was able to reduce the amount of image processing required. In doing so, it offers the potential for organizations to tap into the potential of faster, less expensive facial recognition technology for authentication, surveillance and more.

[1] "FaceNet: A Unified Embedding for Face Recognition and Clustering."
<https://arxiv.org/pdf/1503.03832.pdf>

