Market Opportunity:
The facial recognition market is expected to grow exponentially with applications in security ($232 billion by 2020), smart hospitality ($18 billion by 2020), and digital retail advertising ($16 billion in 2016). Conventional face recognition software has limitations in which each subject is represented by a single image. Current systems are not capable of face recognition under extremely challenging views. For a software to recognize the subject quicker, more samples are required to be processed. With limited images used, information regarding the subject cannot be connected as easily especially with varying angles, poses, and illumination conditions.

USC Solution:
USC researchers have developed an algorithm capable of face recognition under extremely challenging viewing conditions. The images and videos can be collected from different angles, ages, face poses, and illumination conditions. In addition to the algorithm, a complete Application Programming Interface (API) has been developed. This facial recognition system has been test and is judged superior to alternative systems thanks to the unique data augmentation techniques used.

Value Proposition
- Complete end-to-end control
- Significantly more advanced than gold standard
- Automatic face detection
- Requires fewer training data requirements
- Superior to alternative technologies

Keywords:
Software, artificial intelligence, deep learning, face alignment, automatic face detection, face synthesizer, face matching, face representation, API, illumination conditions

Applications
- Occluded facial recognition
- Multi-view facial recognition

Stage of Development
- Experimentally validated
- Available for non-exclusive license

Intellectual Property
Status:
Software available

Key Publications:
- Face recognition using deep multi-pose representations, IEEE 2016
- Do We Really Need to Collect Millions of Faces for Effective Face Recognition?, ECCV 2016
- Computationally efficient template-based face recognition, IEEE 2016

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