Human-computer teams are best

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Recognizing faces is of paramount importance for forensic facial examiners. Recently, however, computer-based face recognition algorithms have been able to 'recognize' faces with human-like accuracy.

P. Jonathon Phillips, of the National Institute of Standards and Technology, and colleagues set out to systematically compare the performance of forensic facial examiners with so-called superrecognizers (people with above-average face recognition ability), normal, untrained people, and several computer algorithms with the goal of identifying the most accurate facial identification system possible. They asked their human participants and four different established face-recognition computer algorithms (based on deep convoluted neural networks) to decide whether pairs of images depicted the same person or different people. The highly trained forensic facial examiners were more accurate than the untrained control groups; however, the most recent of the computer algorithms performed at approximately the same level as the forensic facial examiners. When the performance of the forensic facial examiners was fused with that of the most successful computer algorithm, accuracy improved even more, stabilizing performance and decreasing variability. This human-machine collaboration also outperformed two human experts working together.

In summary, this comprehensive examination of face-recognition ability demonstrates that optimal face identification arises when humans and machines collaborate.

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