Press Releases

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Multi-racial facial recognition system provides more accurate results

A multi-racial facial recognition system delivers more accurate results than those typically used today, a study published in Pattern Recognition journal has revealed.

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The University of Surrey has developed a 3D morphing face model that has 'learned' from different racial faces and can better identify people in 2D pictures – even if a person's appearance is compromised by their pose, expression, lighting or poor image resolution.

Many facial recognition systems fit 3D models to 2D faces found in pictures. However, most systems use the same model for different races and ignore inherent differences. The team from Surrey's Centre for Vision, Speech and Signal Processing (CVSSP)

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Featuring

Professor Adrian Hilton
Head of CVSSP, Head of Department (Research)

[https://www.surrey.ac.uk/centre-vision-speech-signal-processing] found that the use of multi-racial 3D face models improves accuracy when trying to recognise people. It also found that the team's aging effect technology – which is used to identify individuals after a long period of time has passed – is more precise when you use a model that is taught to learn different races.

Lead author of the paper Dr Zhenhua Feng from CVSSP said: "It's safe to say that facial recognition technology is slowly becoming more prevalent in our daily lives. We need to make sure it's as accurate as possible, so people can trust the technology. We have found that our model that understands black, white and Asian faces is far more accurate at recognising 2D faces than the typical all-in-one models used today."

Professor Adrian Hilton, Head of CVSSP, said: "CVSSP research is advancing the machine perception of faces, taking into account the diverse variations, and is leading the way to make face recognition technology a practical tool for widespread deployment of improved security and access systems."

Dr Feng has recently won a prestigious European Biometric Industry Award for his work around facial landmark localisation and he is part of a team at CVSSP that is working on a £6m project for the Engineering and Physical Sciences Research Council to make facial recognition ubiquitous across the country.

Professor Josef Kittler, Distinguished Professor at the University of Surrey and founder of CVSSP, said: "We believe that facial recognition technology will be a force for good. It will help us protect our possessions, provide better security for our data and keep us safe from harm. However, the matter of accuracy is something we all have to be mindful of and that is what we are working on improving at CVSSP.

"Dr Feng's project and the wider work we are doing at the Centre is focused on improving the accuracy of facial recognition technology, even in extreme cases where the resolution of the corresponding image is compromised, or in cases where people may try to trick a system."

Professor Josef Kittler
Distinguished Professor
Dr Zhenhua Feng
Research Student

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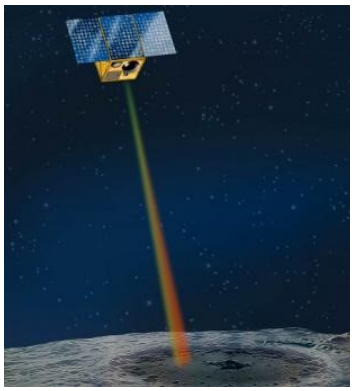

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