

Proposal For Talk at BMVA Symposium: "Advancing Biometric Technologies"

### **Face Recognition using Active Appearance Models**

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We describe a face recognition system which uses statistical models of appearance (shape + texture) to verify identity of users. The models are built from large training sets of annotated images and can synthesize new face images. Given a large enough training set almost any face with almost any expression can be synthesized. The parameters of the model which synthesize an image similar to a particular face image can be analysed to determine the identity, expression, head pose etc of the person viewed. We demonstrate that simple linear techniques are sufficient to separate out expression change from identity change, allowing use to recognise/verify people exhibiting a range of expressions.

The models can be matched to new images rapidly using the Active Appearance Model algorithm. We will describe the model building process, results of classification experiments under various conditions and a demonstration access control system currently being tested in a workplace in Italy.