TECHNOLOGY

Modeling Facial Aging in Adults

OVERVIEW

Researchers at the University of Maryland have been studying and developing personalized facial growth models based upon data gathered for an individual's facial growth over many years. More particularly, their model predicts an individual's future appearance which can subsequently be used to perform face recognition across age progression.

During one's adult years, facial aging effects are predominantly the result of factors such as the prolonged effects of gravity, loss in muscle elasticity, and facial fat atrophies, among others. The invention derives a face shape transformation model that characterizes, captures, and projects subtle face deformations as they occur in adults.

Evidence of current physical properties and geometric orientations of human face muscles is gathered. A face texture transformation function is then applied to project facial wrinkles and other skin changes at different ages. The facial shape variation model, combined with the skin texture variation model, provide an improved personalized facial aging model which more accurately characterizes and predicts facial aging effects in adults. The proposed model implicitly accounts for varied factors that are known to have an effect on facial aging such as: weight loss/gain, gender, ethnicity, age group, etc.

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