Generating Expressive Facial Mesh Animation : A Survey

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Abstract

With technology allowing for increasing realism in games and movies, facial animation is still a very challenging task.

1. Introduction

Psychologically, Human tend to be very sensitive to facial expression. Unnatural facial animation can be directly lead to uncannyness [1], which hurts overall experience. So, delivering natural expressive facial animation is a great interest in graphics field.

Modern movie and game renders realistic 3D face animation that delivers human expression naturally, but is very labor-intensive job when done by hand(maybe cite). Capturing human face in 3D and rendering it is a well-understood field(cite here). But such approach requires gigabytes of data from expensive capture system and is hard to manipulate. This lead to research that tries to automate such job, or simplify the process.

Lip-sync is a topic.

Eye and eyebrow animation is another topic.

Generating such animation from auditory data is a field.

Capturing and mapping to latent space is a field.

Emotion transition from/to neutral face is a field.

References

[1] David Hanson, Andrew Olney, Steve Prilliman, Eric Mathews, Marge Zielke, Derek Hammons, Raul Fernandez, and Harry Stephanou. Upending the uncanny valley. In *AAAI*, volume 5, pages 1728–1729, 2005. 1