Image registration and Active Appearance Models

Appearance Models Overview

- Appearance models have been shown to be useful for image analysis

- Theory require a mechanism which would construct them *automatically*

Automatic Model Construction

- Automatic construction has been shown for shapes
- The new problem is similar to the previous
- Foundations for automatic AAM are missing

Registration

- Correspondence needed for AAM construction
- Data-driven pair-wise registration provides possible solution
- Disadvantage: correspondences are arbitrary

Group-wise Registration

- Typically transformation is dependent on reference
- Need to explain how registration can be turned into whole group
- Can then express appearance statistically using transformation

Shape and Appearance

- Shape models automatically constructed

- Similar principles can be applied to appearance

Feasibility

- No distinct transformation sequence to define correspondence

- Shape and intensity are incommensurate

Summary

- Shape models can be constructed automatically
- Need to apply same ideas to appearance models
- Image registration establishes correspondence
- Feasibility becomes an issue