Possible Outlines: BMVC 2005 and MICCAI 2005

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Marked in RED are bits that need to be re-generated or produced from scratch.

BMVC

Introduction

- What appearance model are
- The need to evaluate models
- The benefits of evaluation

Background

- Correspondence problem
- Appearance models: example
- Different methods of different research groups for creating appearance models and the like (e.g. SDM)

Methods

- Show model/s (the famous '3 or 5 images' view)
- Synthesis from the model (show face, brain examples)
- Introduction of the shuffle transform
- Using existing graphics files to explain about the *framework*

Experiments

- Show some hand annotated brains/faces. Probably include just brains in MICCAI.
- Show perturbation applied to correspondences
- Show CPS splines applied to images (points are immutable)
- Show how models change after noise has been applied to points/images
- Explain about the increasing-sigma/elevating-warp-magnitude (or number) experiments
- **Questionable:** Possibly include a comparison between automatically-generated models, e.g. group-wise and pair-wise
- **Addendum:**
  - Consider inclusion of face images 'treatment', e.g. masking and rigid alignment
  - Alternatively, explain about 104 brain volumes being aligned and sliced
  - Acknowledge the Wellcome trust for faces, German source of faces with description of the database
  - Properties such as a high number of glasses and beards within

Results

- Show 'number-of-modes' graph for increasing sigma
- Show different shuffle distances and Euclidean; discuss this
- **Questionable:** Show 'number-of-modes' graph for different models
- Present the way that CPS-based noise can be applied to the images
- Show the impact of the above on the model/s

Conclusions/Summary

- We have introduced a model evaluation scheme.
- The demonstrated that it can distinguish between (what is claimed to be) good models and worse models – referring to group-wise, points moving to regions of high variance, etc.

MICCAI

Introduction

- As in BMVC, emphasis on brain models; citing brain-related publications

Background

- Ditto

Methods

Differences w.r.t. BMVC:

- Different figures need to be produced
- Show brain models in more depth to make use of space
- **Undecided:** Distinguish between hand-annotated model and automatically-built models
- Possibly refer to TFC's work on automatic brain model construction
- Normalisation

Experiments

- Experiments with different brains models from TFC
- Experiments with sigma changes, number of modes
- CPS warps and their effects on brain models
- **Possible:** Comparison with Bill Crum's methods of validation

Results

- Similar to BMVC, but referring to relevant experiments and discussing each in more depth

Conclusions/Summary

- We can evaluate the quality of a brain model
- **Questionable (needs rephrasing):** Can use this to validate registration?
- Good models can be identified and evaluated quantitatively