Human Shape from Silhouettes using Generative HKS Descriptors and Cross-Modal Neural Networks

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Task Description

Goal: Human 3D Body Shape Estimation from Silhouettes

Scenarios Considered:
- Shape from “Selfies”
- Single View
- One or Two Views

Contributions:
- A novel architecture for shape estimation from silhouettes
- Three core components:
  - Generative: Inverts a pose invariant 3D shape descriptor to reconstruct its neutral shape
  - Predictive: Maps 2D silhouettes to 3D body shapes
  - Cross-modal: Leverages multi-view information to boost single view predictions
- State-of-the-art system for human body shape estimation

Qualitative Results

Qualitative Comparison with Related Work

References