Illumination-invariant Robust Multiview 3D Human Motion Capture

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Goal

Input

Output

http://gvv.mpi-inf.mpg.de/projects/IntrinsicMoCap/
Related Work

- Color-based:
  - Calibrated Light
  - Controlled Studio

- Data-driven (e.g. CNN)
  - More robust to illumination
  - Sparse information
  - Temporally unstable

2D Joints Detections

http://gvv.mpi-inf.mpg.de/projects/IntrinsicMoCap/

Nadia Robertini
Our Approach

2D Joints Detections

Pre-segmented Frames

http://gvv.mpi-inf.mpg.de/projects/IntrinsicMoCap/
Our Approach: Material Segmentation

Input → Appearance Costs → Pose Costs → Output

http://gvv.mpi-inf.mpg.de/projects/IntrinsicMoCap/
Results: Illumination Robustness

Global

Soft Shadows

Harsh Shadows

Global
Results: Initialization Robustness

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Comparisons

Ours

Data-driven

Combined

Color-based

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Thank you!

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Data Available!

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