Faculty of Mathematics, Physics and Informatics

Skeleton Tracking with Camera and Set of IMUs

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www.skeleton.starpoint.sk

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About Thema

- Coding in C++, OpenCV, OpenGL…
- Using of RGB or RGBD camera and IMUs
- IMUs can be attached in arbitrary configuration
- Global energy minimization with point cloud and IMU terms

Actual Resources

- Robust Articulated-ICP for Real-Time Hand Tracking

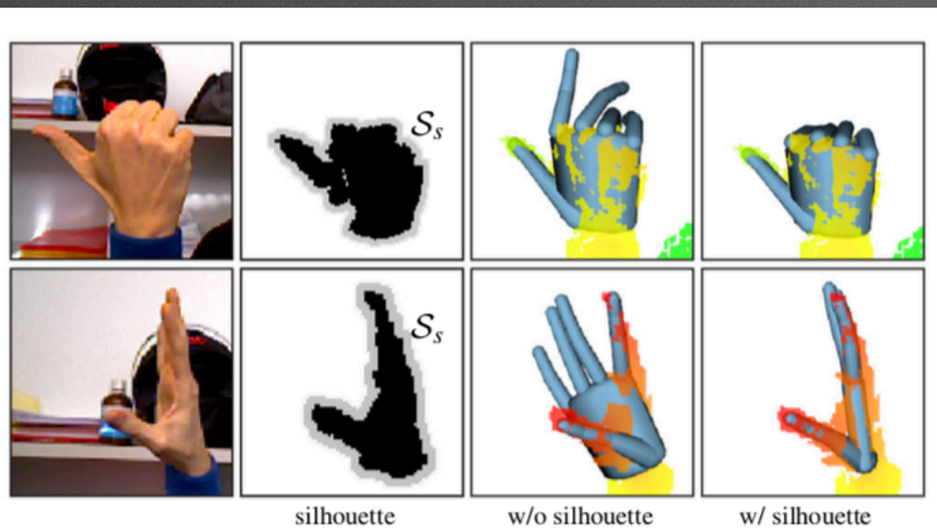
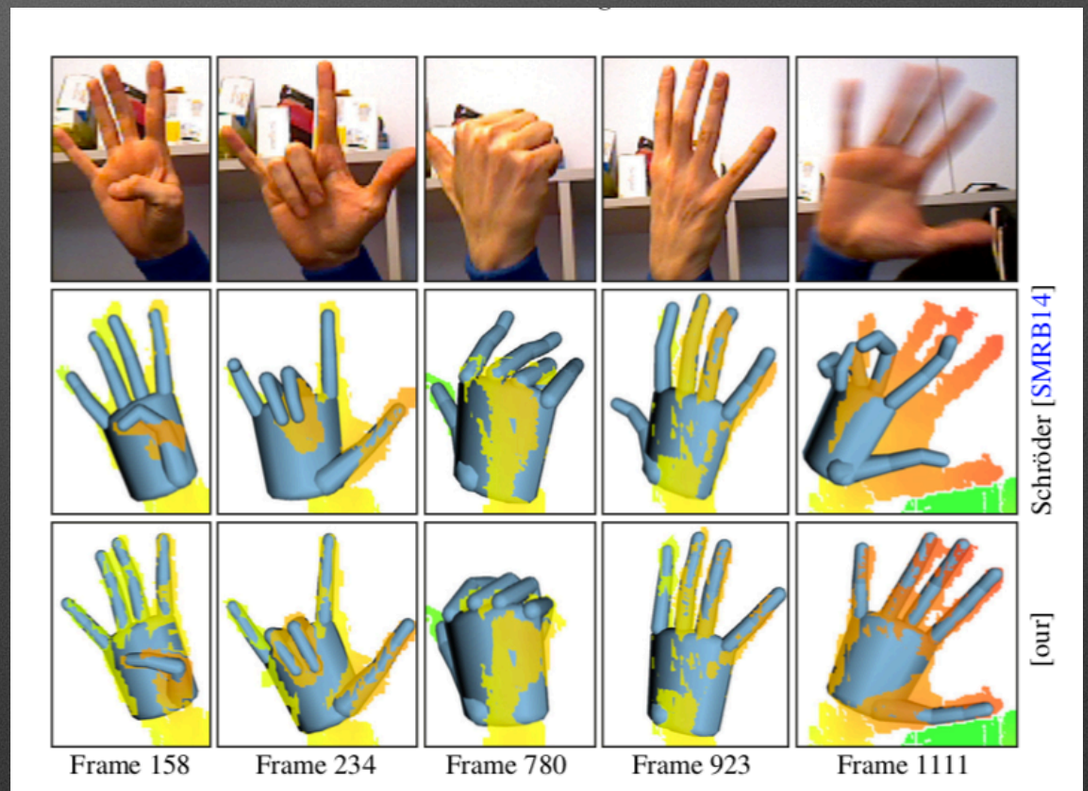
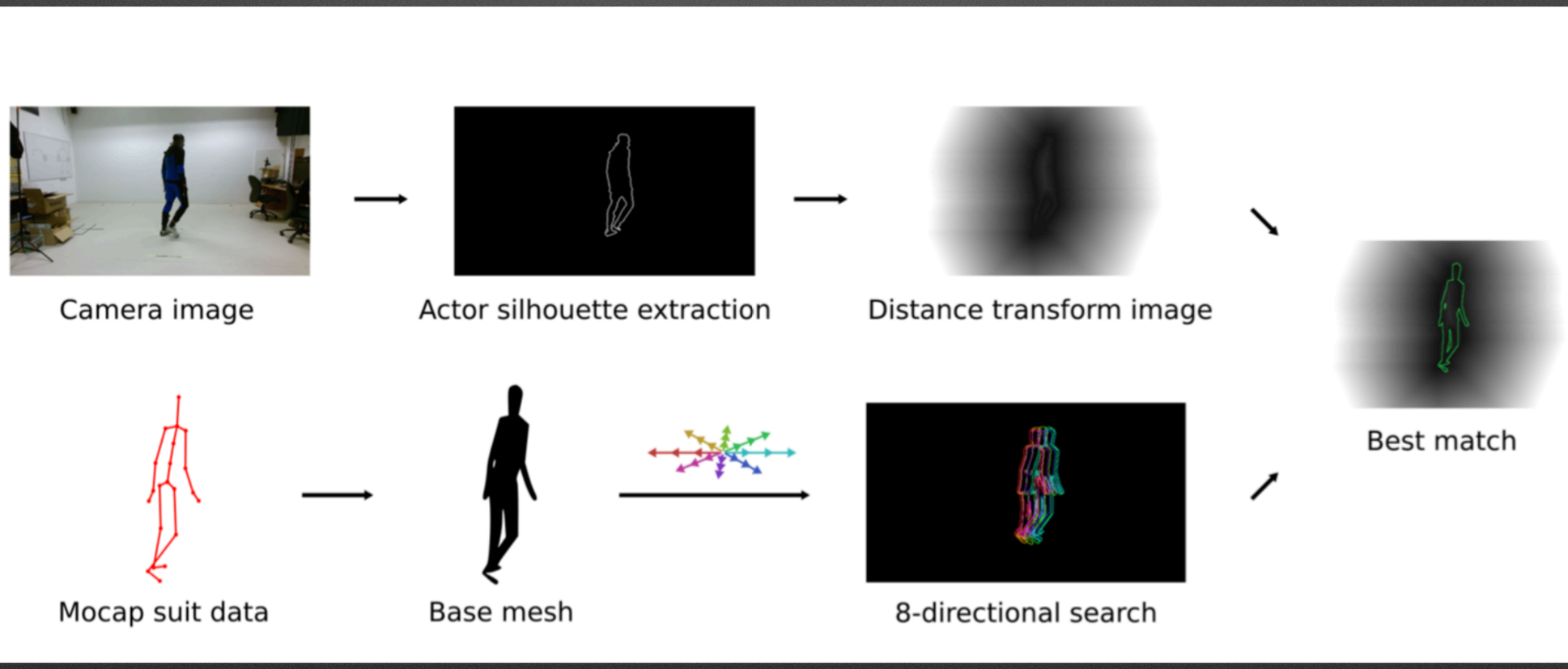


Figure 8: *Our 2D silhouette registration energy is essential to avoid tracking errors for occluded parts of the hand. When no depth data is available for certain parts of the model, a plausible pose is inferred by ensuring that the model is contained within the sensor silhouette image $\mathcal{S}_s$.*



lack of silhouette and loss of tracking due to fast motion

- Sphere-Meshes for Real-Time Hand Modeling and Tracking
- Online Generative Model Personalization for Hand Tracking
- Optical-Inertial Synchronization of MoCap Suit with Single Camera Setup for Reliable Position Tracking



What I've Done

- read all papers
- make project webpage
- try to make sense of first 2 papers

My Next Steps

- make sense of all mentioned papers (mainly 3. And 4.)
    - 1 week delay
- look over “papers” projects videos and example implementations

Thank you