Capturing Dynamic Textured Surfaces of Moving Targets

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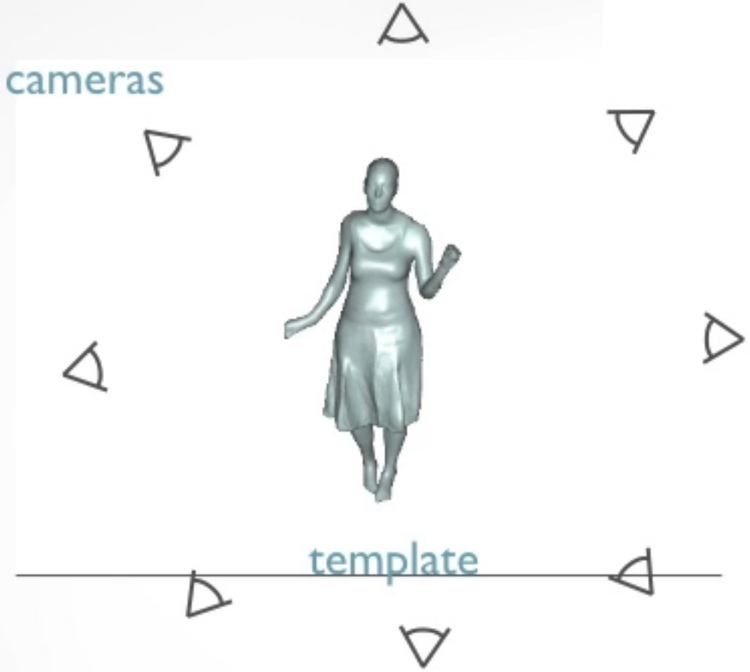
Free-Viewpoint Video for AR

[Dou et al. '16]

Objective

Prior Work

Template-Based Capture

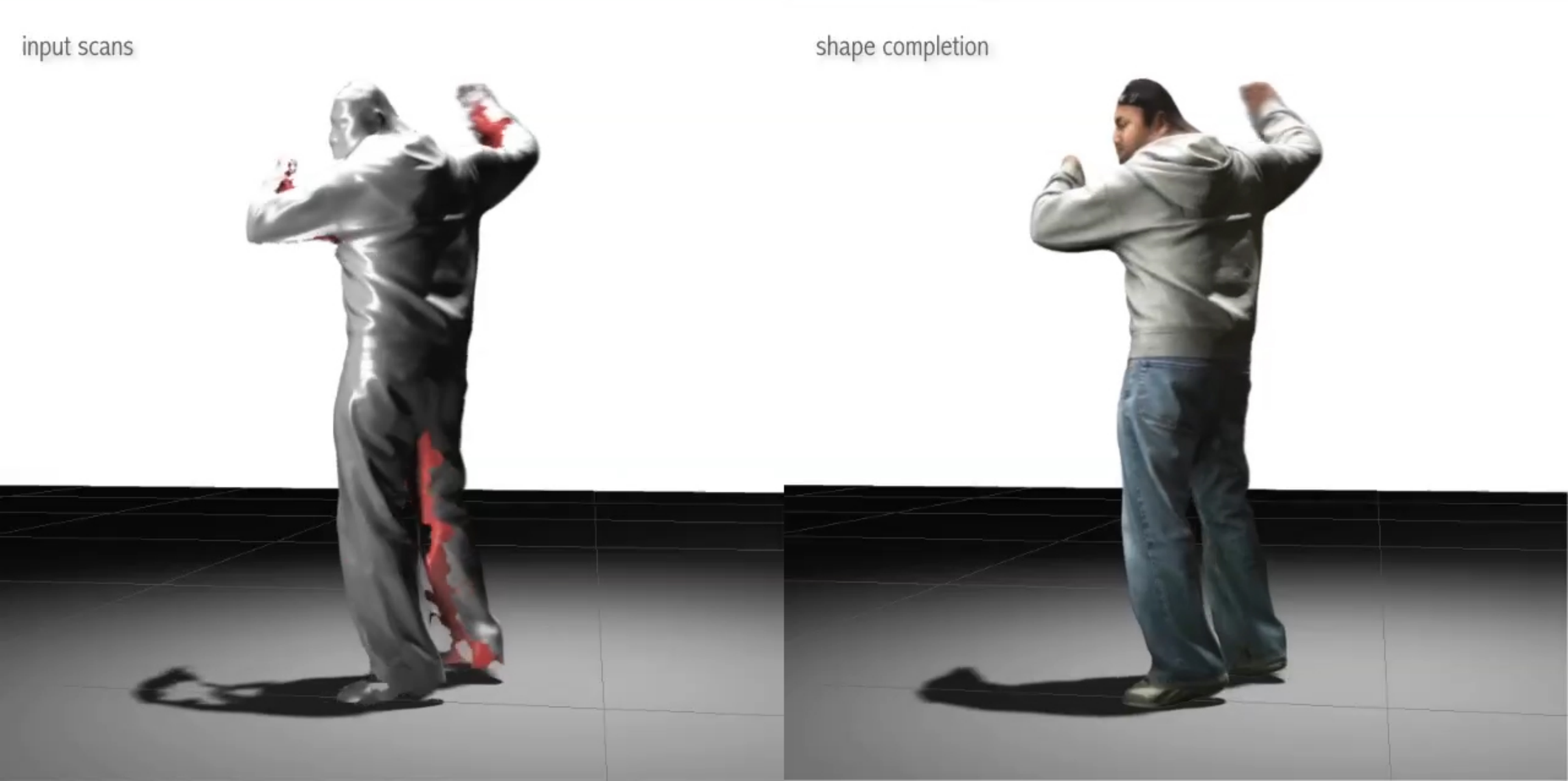


[deAguiar et al. '08]

[Vlasic et al. '08]

Dynamic Shape Completion

[Li et al. '12]



Surface-Based Tracking

[Bojsen-Hansen et al. '12]

High-Fidelity Free-Viewpoint Video

Microsoft

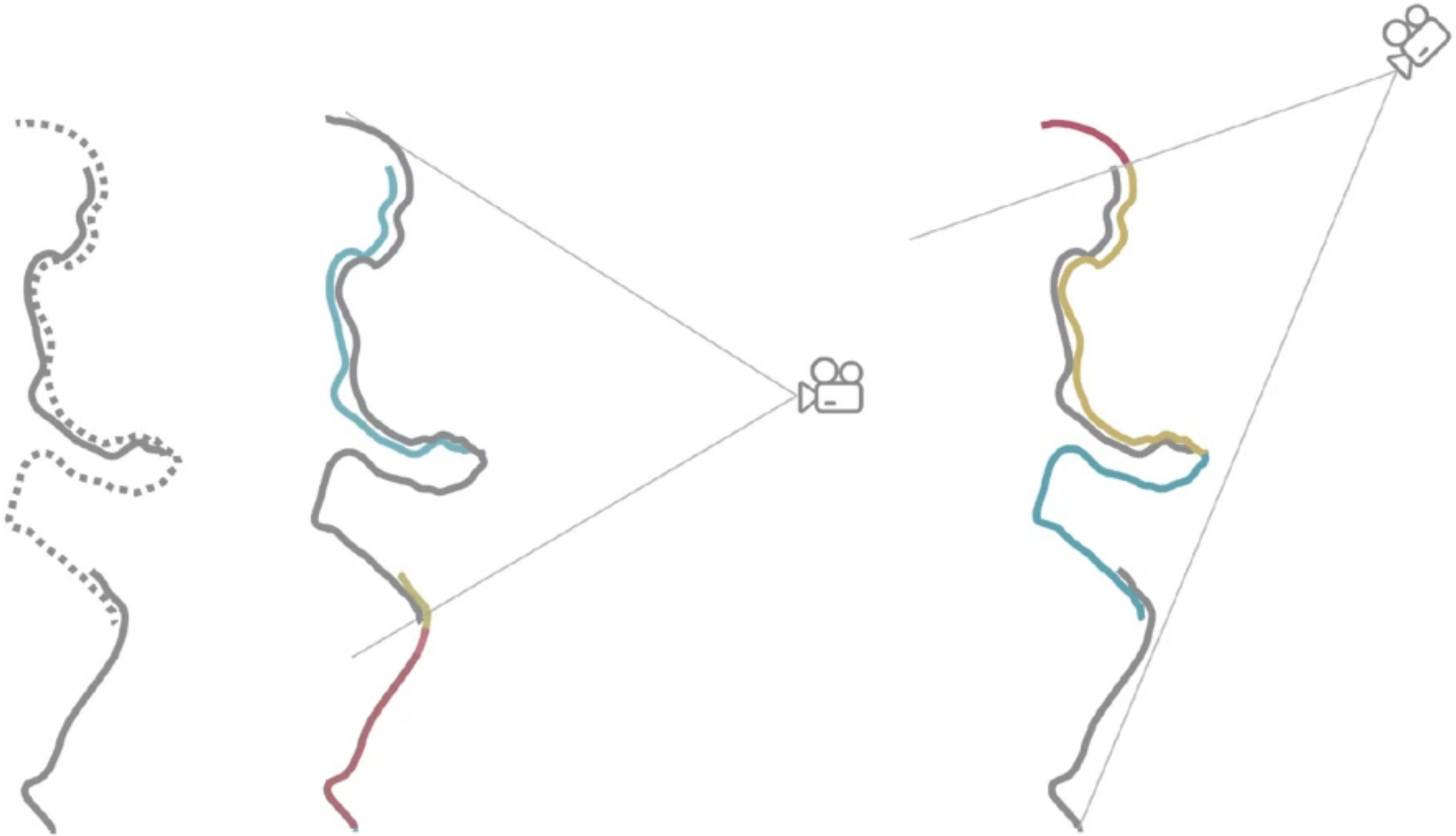
Complex Capture Setting

Microsoft

Light-Weight Capture

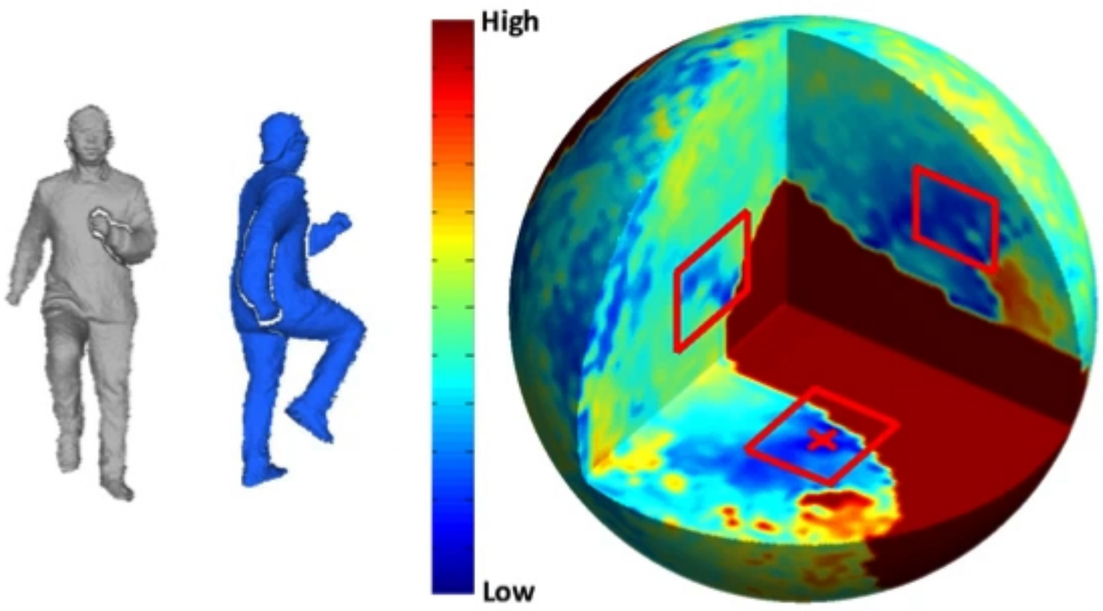
Low Cost Capture & Moving Target

Visibility-Based Registration

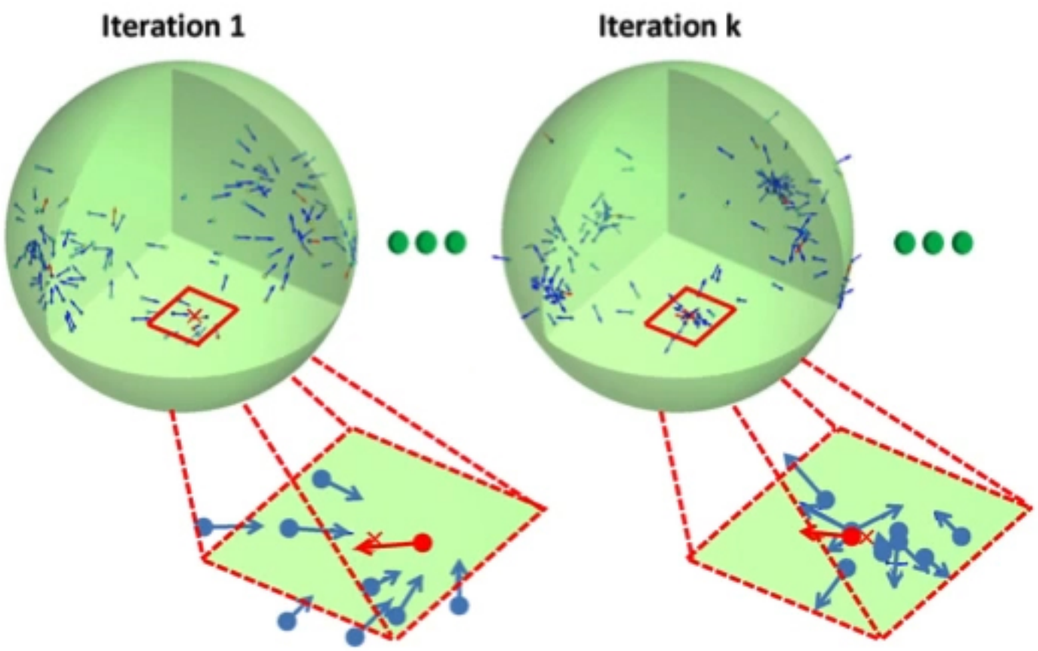


Visibility Error Metric (VEM)

Visibility-Based Registration



VEM on Rotational Space



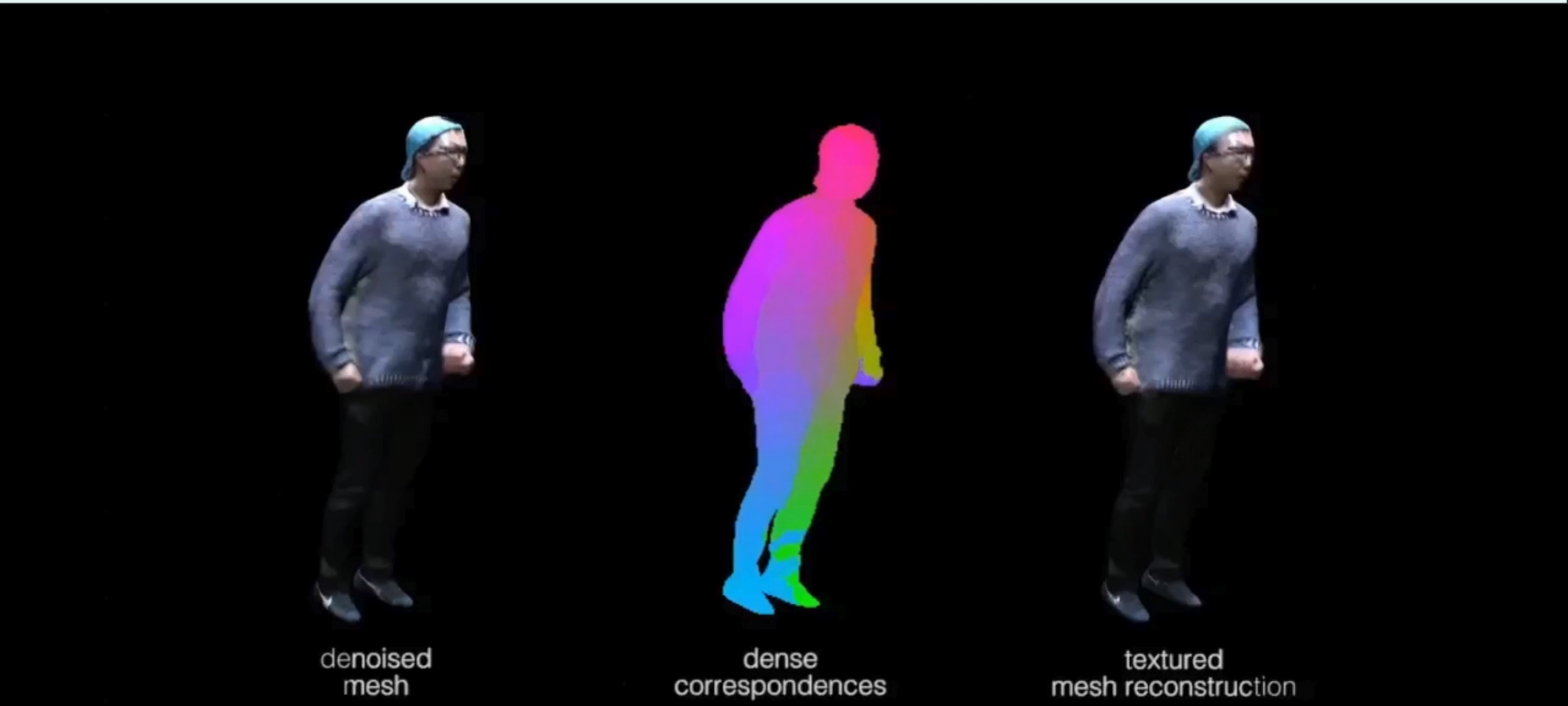
Particle Swarm & Gradient-Base optimization

Registration and Reconstruction

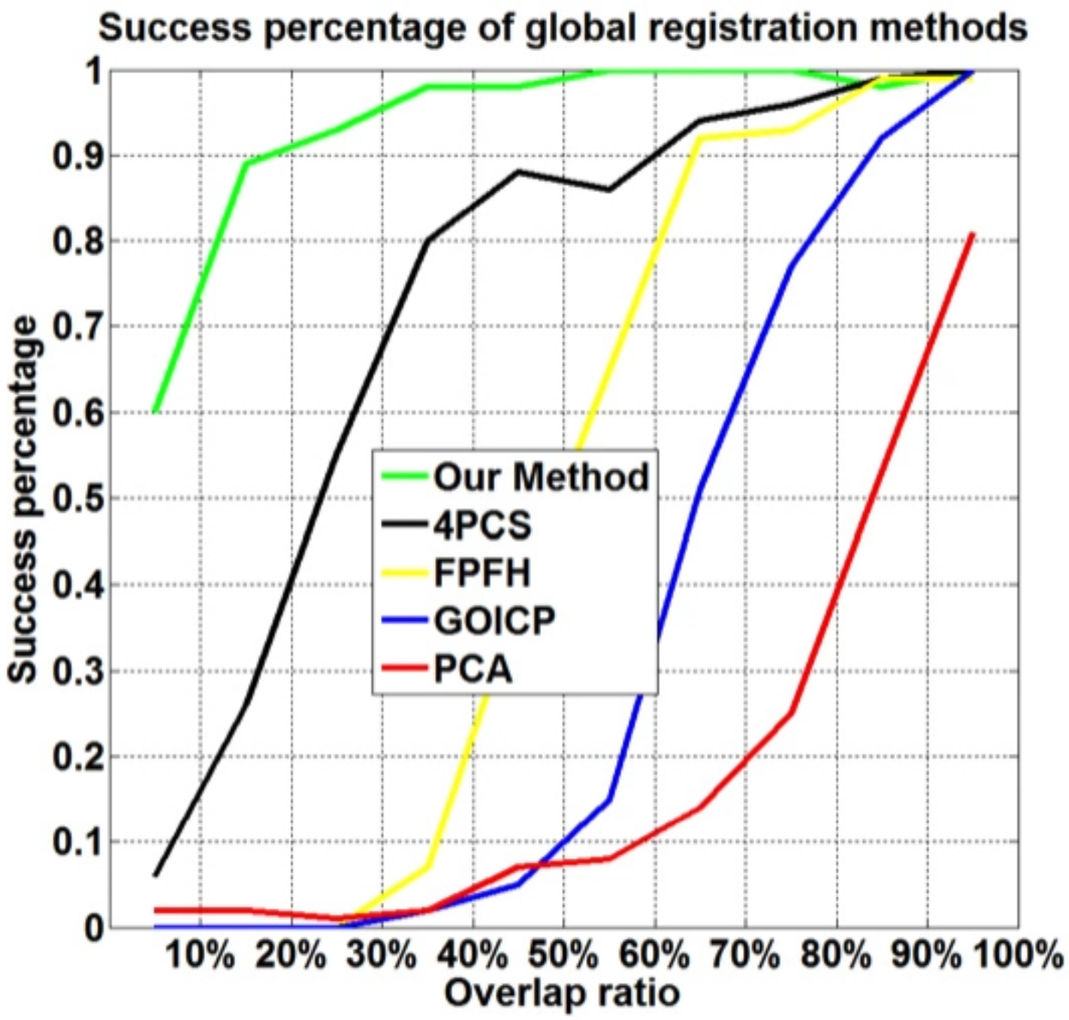
output scan alignment

output textured reconstruction

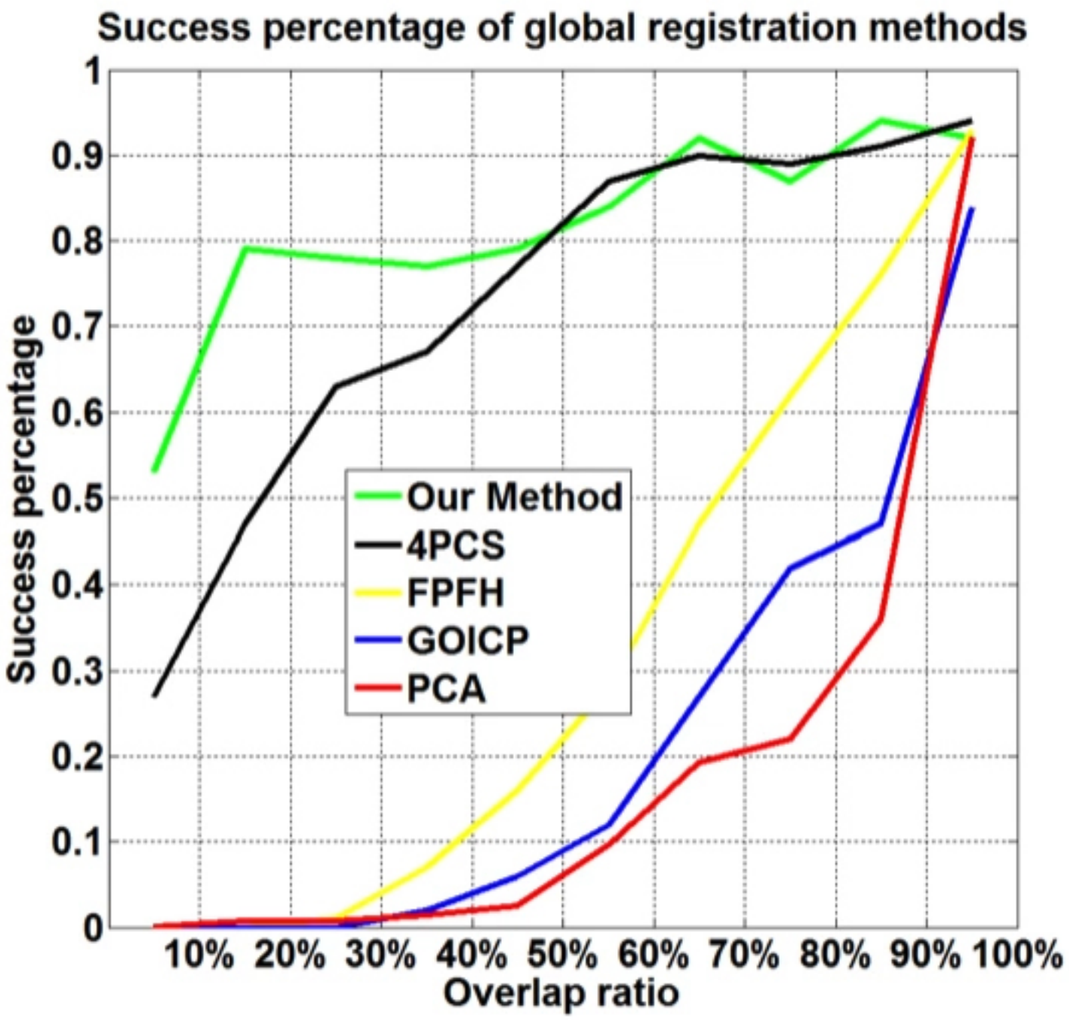
Filtering and Texture Reconstruction



Registration Evaluation

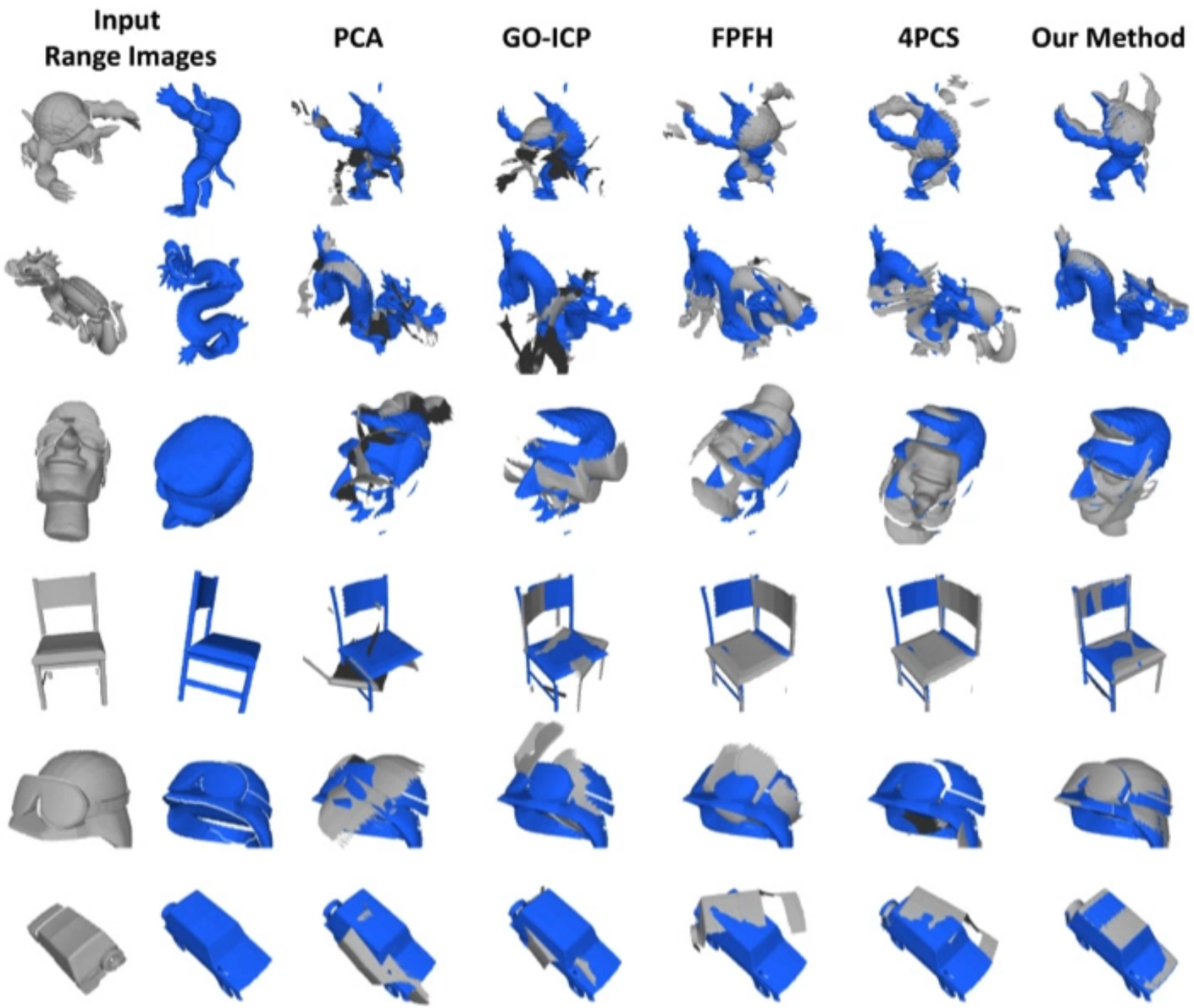


Stanford 3D Scannin Repository



Princeton Shape Benchmark

Registration Evaluation



More Results

More Results

sparse scan alignment

textured reconstruction

Thanks