FAST HUMAN SEGMENTATION USING COLOR AND DEPTH

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Challenges
- High variance in Foreground Background color distributions.
- Similarity in Foreground – Background color distributions.
- Varying user poses and occlusions.

Solution?
- Multi Modal Approach

Our framework: Three Stage Segmentation
- Probable foreground extraction - Two color based, Two depth based.
- Multi-Hypothesis based Segmentation - Color modelling using FG – BG probabilities & Skeleton. Graph cut with temporal re-use of color models.
- Post processing – Depth modeling based refinement. Local motion based compensation.

Human Segmentation from Videos

Performance
- Accuracy (F1) = 0.975
- Processing Time = 38 ms per frame
- Memory Usage = 150 MB
- CPU Utilization = 30%

Results comparison