

# Motion Invariant Photography

Anat Levin    Peter Sand    Taeg Sang Cho  
Frédo Durand    William T. Freeman  
Massachusetts Institute of Technology,  
Computer Science and Artificial Intelligence Laboratory

# Linear-rail motions

# Static Camera



# Our Camera



# Our Result

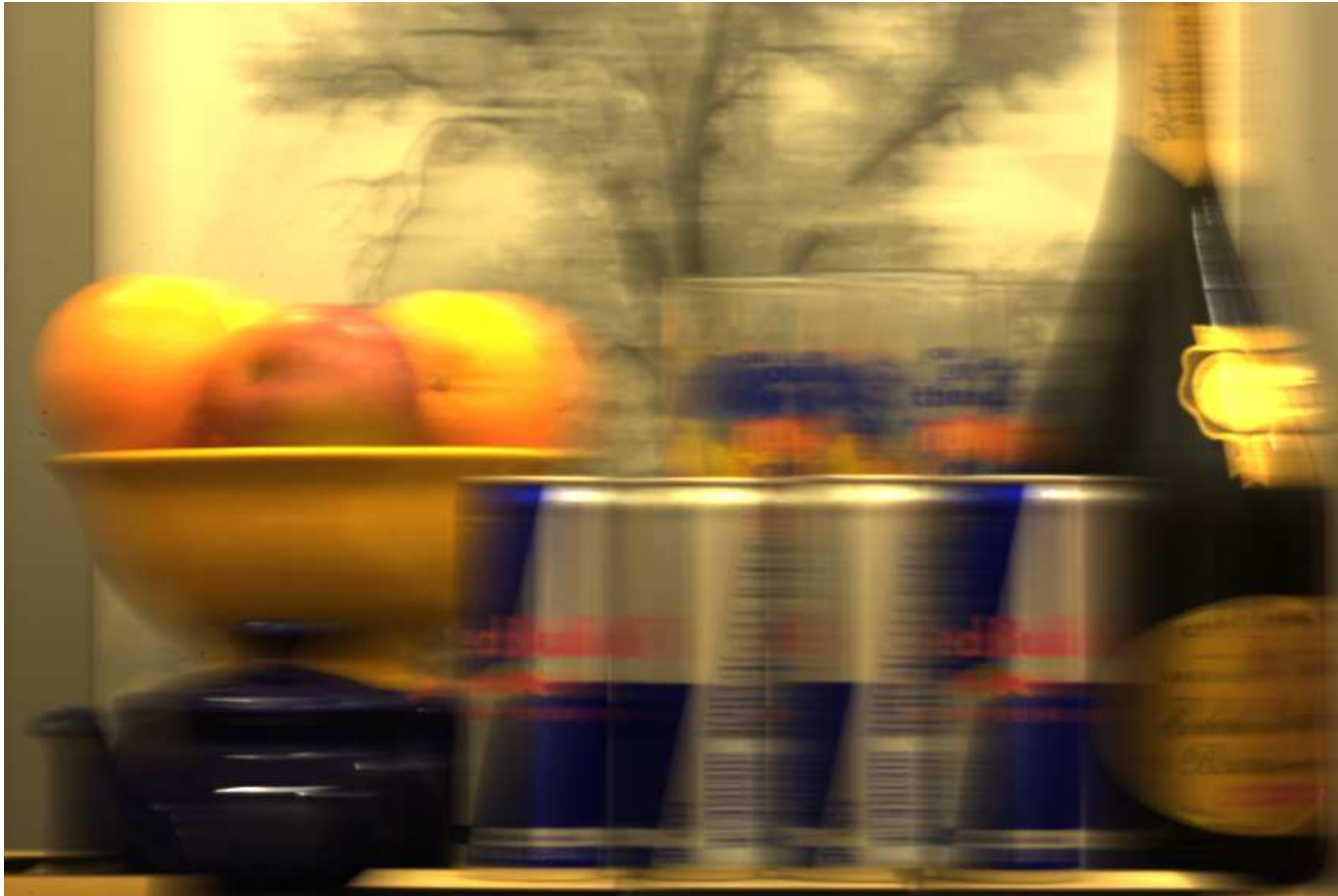


# Static Camera





# Our Camera



# Our Result





# Static Camera



# Our Camera



# Our Result



# Human motion

# Static Camera



# Our Camera





# Our Result



# Static Camera



# Our Camera



# Our Result



# Static Camera





# Our Camera

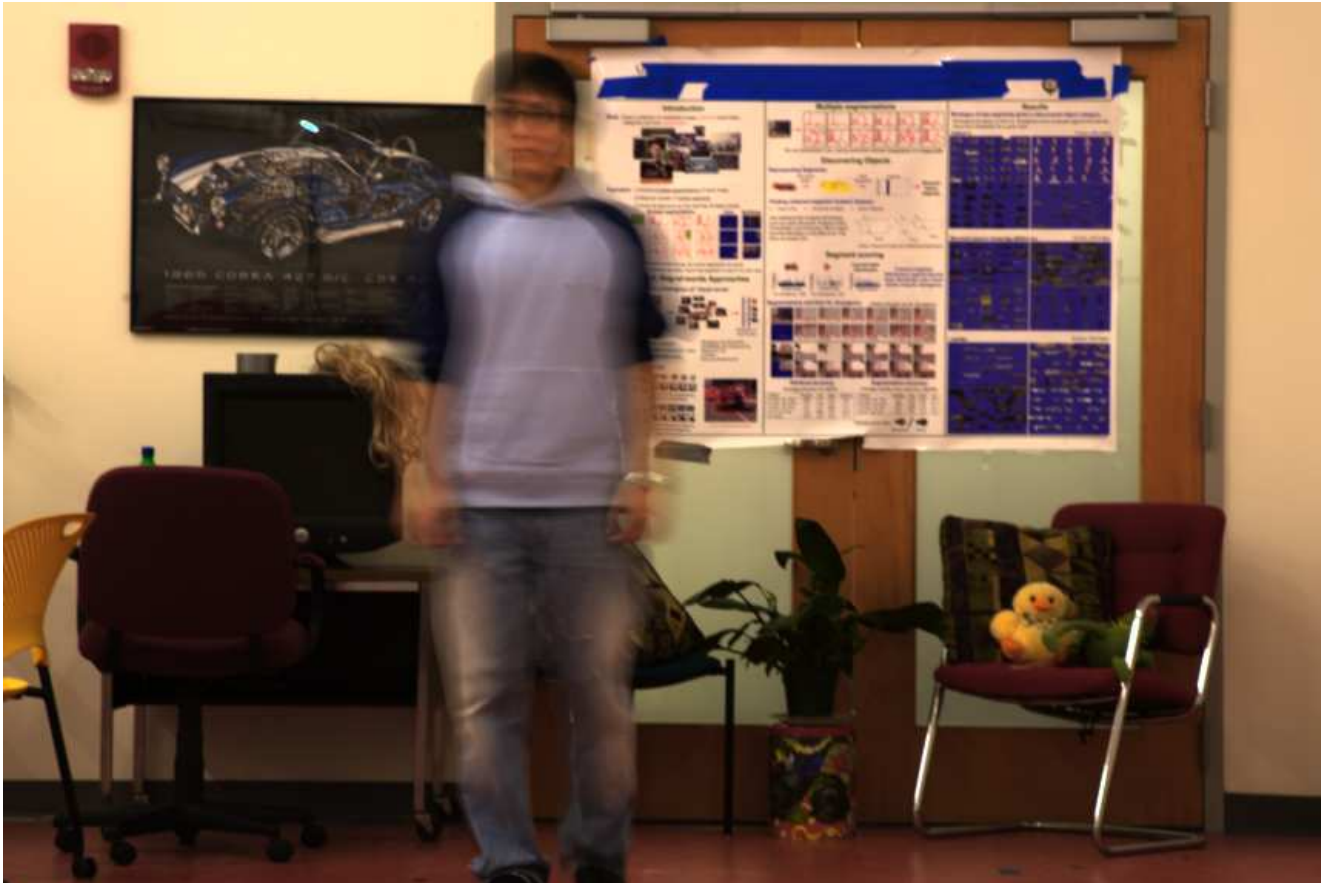




# Our Result



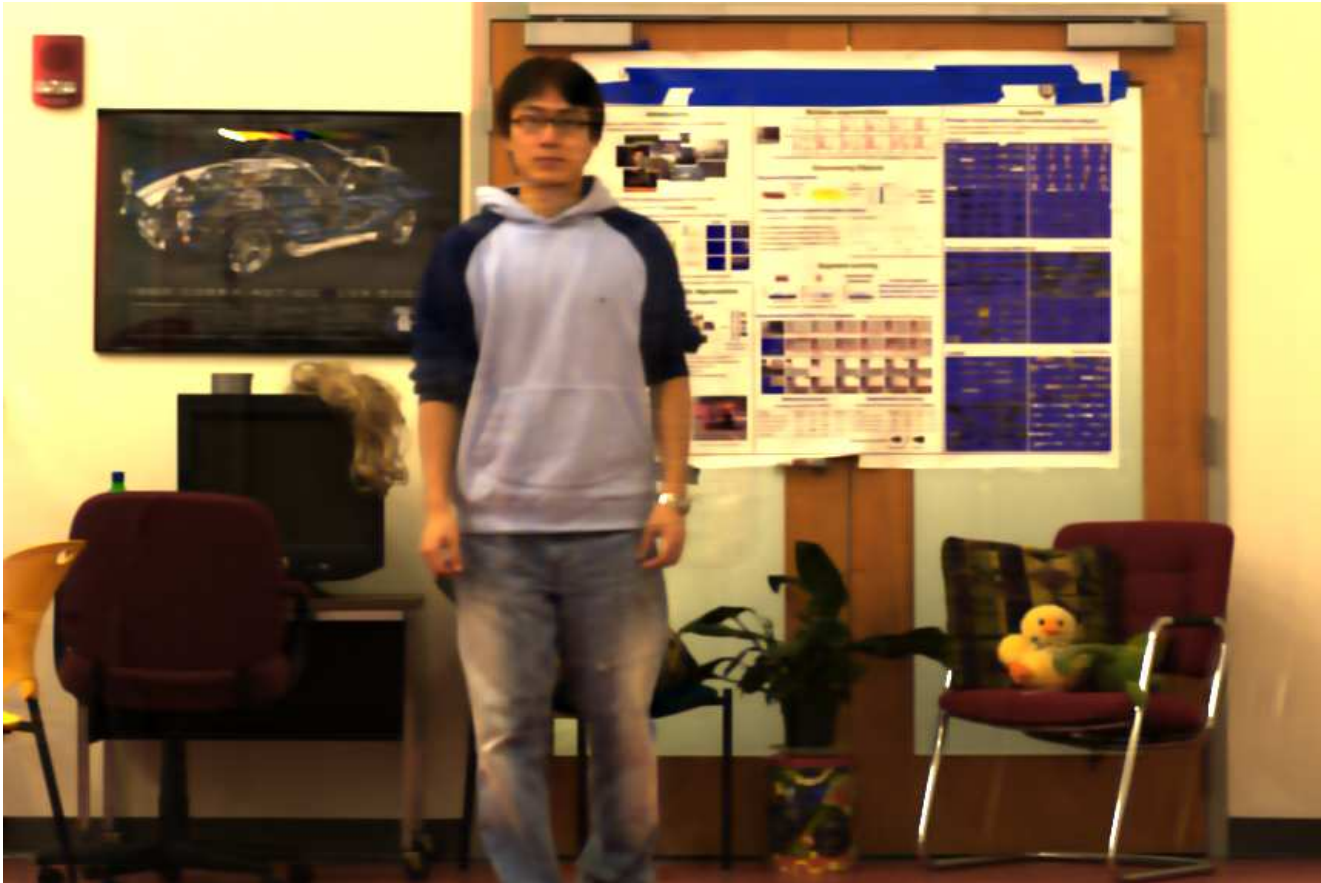
# Static Camera



# Our Camera



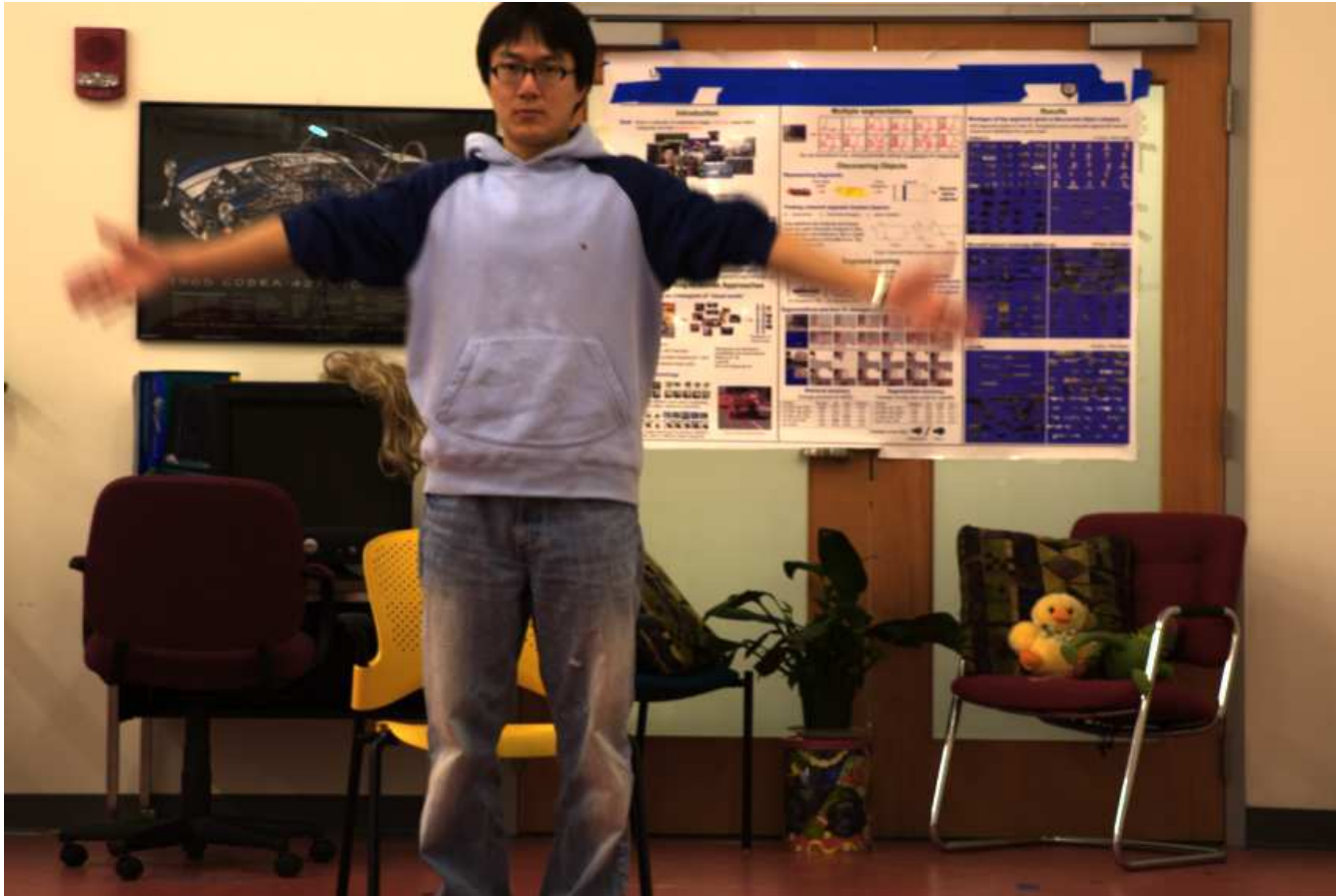
# Our Result



Deviation from horizontal motion- forward motion



# Static Camera



# Our Camera





# Our Result



Deviation from horizontal motion- vertical hands motion

# Static Camera



# Our Camera



# Our Result



# Static Camera





# Our Camera





# Our Result



# Static Camera



# Our Camera



# Our Result



# Human motion failures



# Static Camera





# Our Camera



# Our Result



Standing-up motion. Motion is mostly vertical leading to artifacts in the deblurred face.

Some clothing deblurred properly, despite the dominant horizontal component.

# Static Camera



# Our Camera





# Our Result



Rotation, generating object velocities at all orientations and many different speeds.  
Considering the non horizontal orientation range, deblurring result is relatively good.

# Static Camera



High motion velocity. Notice the head smear.



# Our Camera



# Our Result



High motion velocity. Low SNR and PSF tail artifacts.