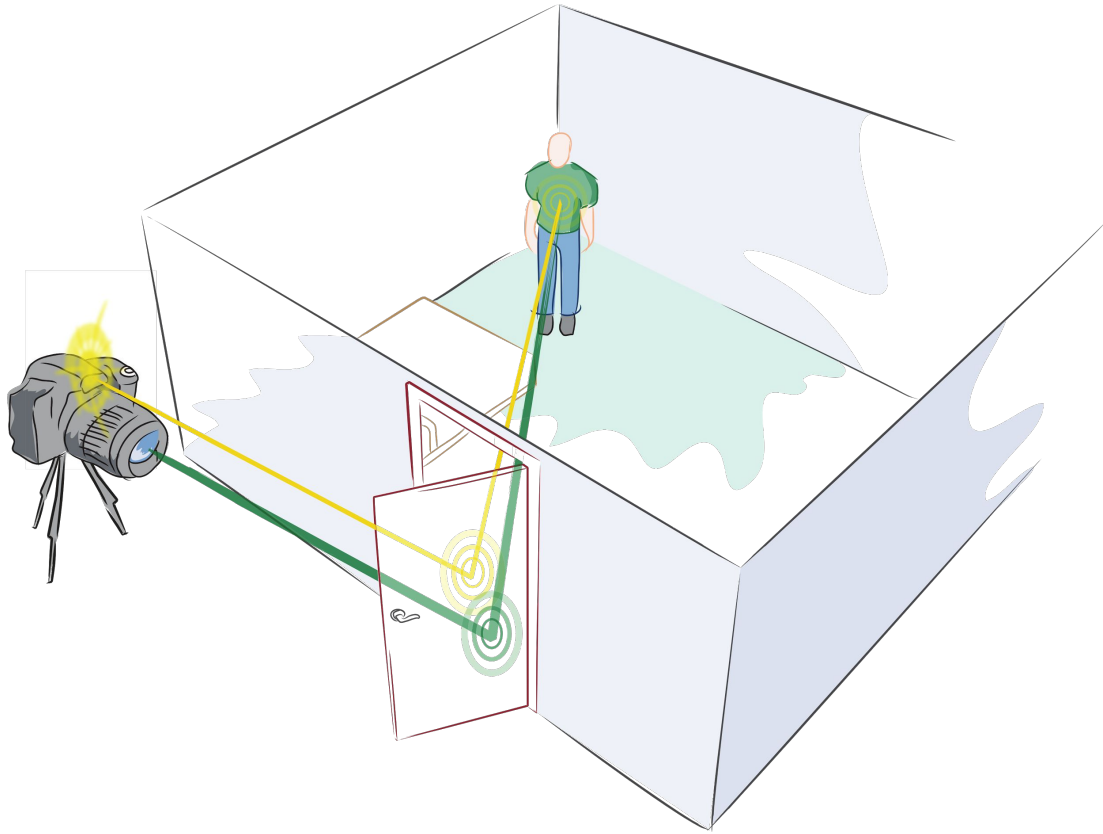


# Recovering Three-dimensional Shape Around a Corner using Ultrafast Time-of-Flight Imaging

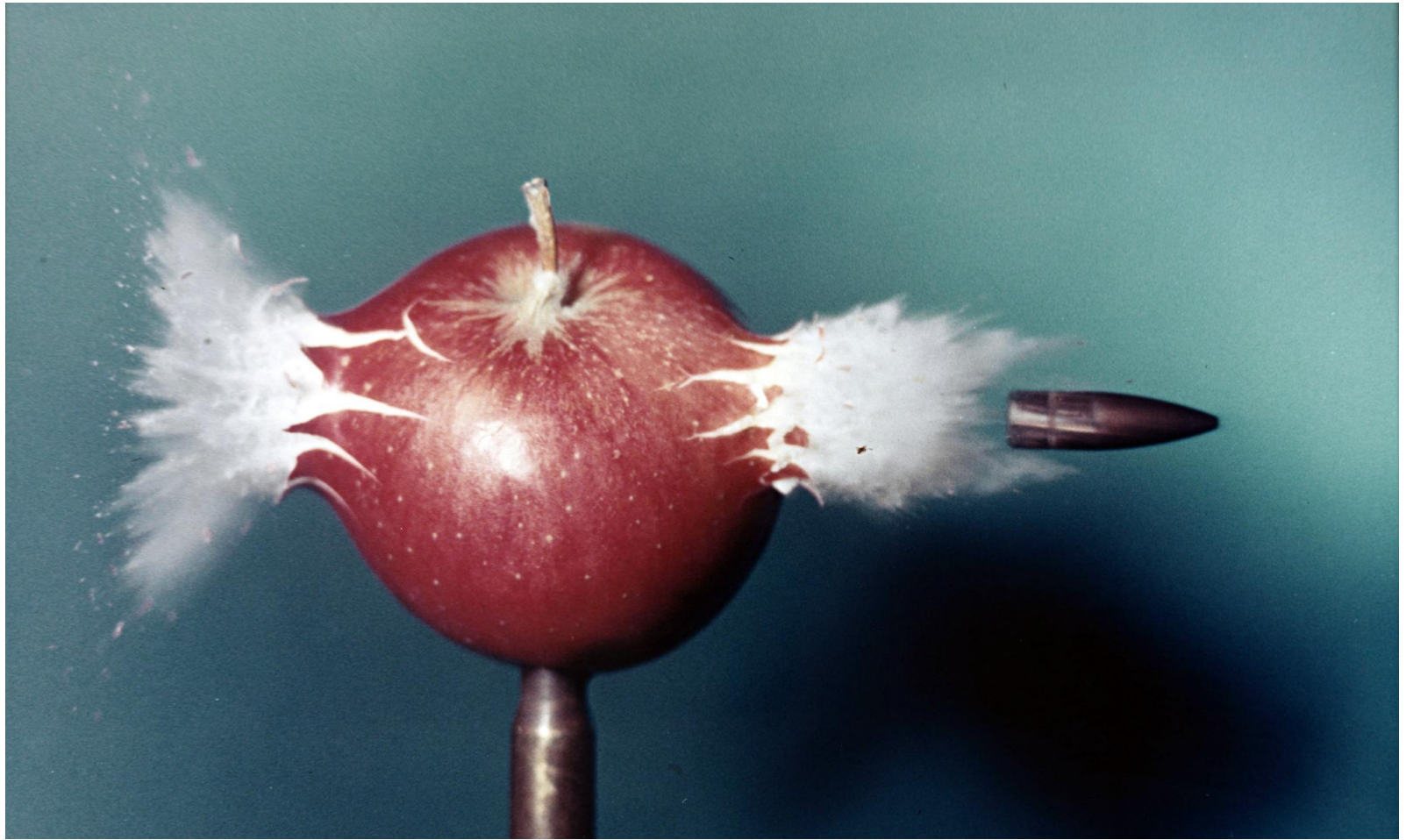
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Shiyu Dong, Sida Wang  
03/17/2016

# Introduction

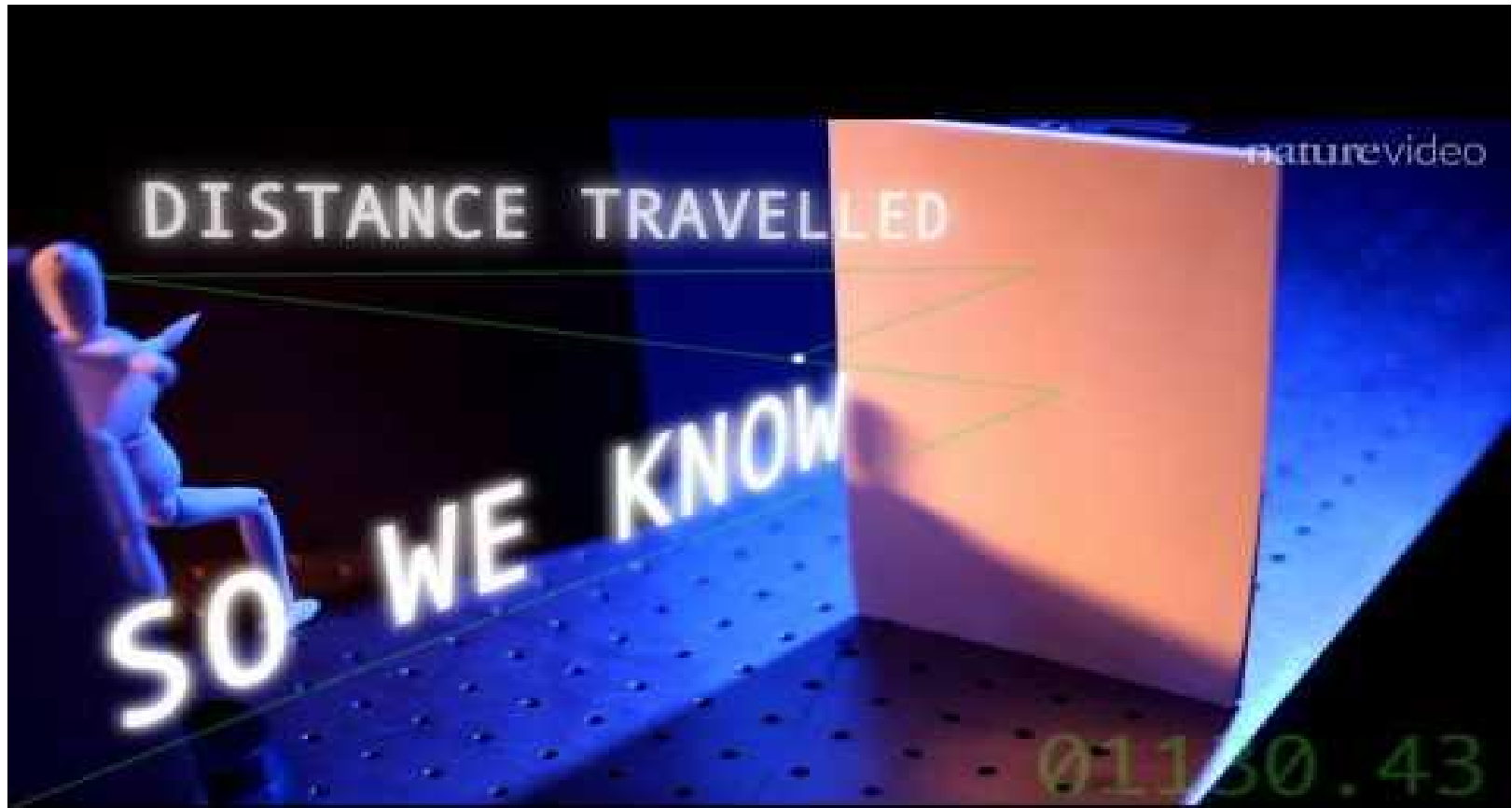


**How to see  
around corners?**

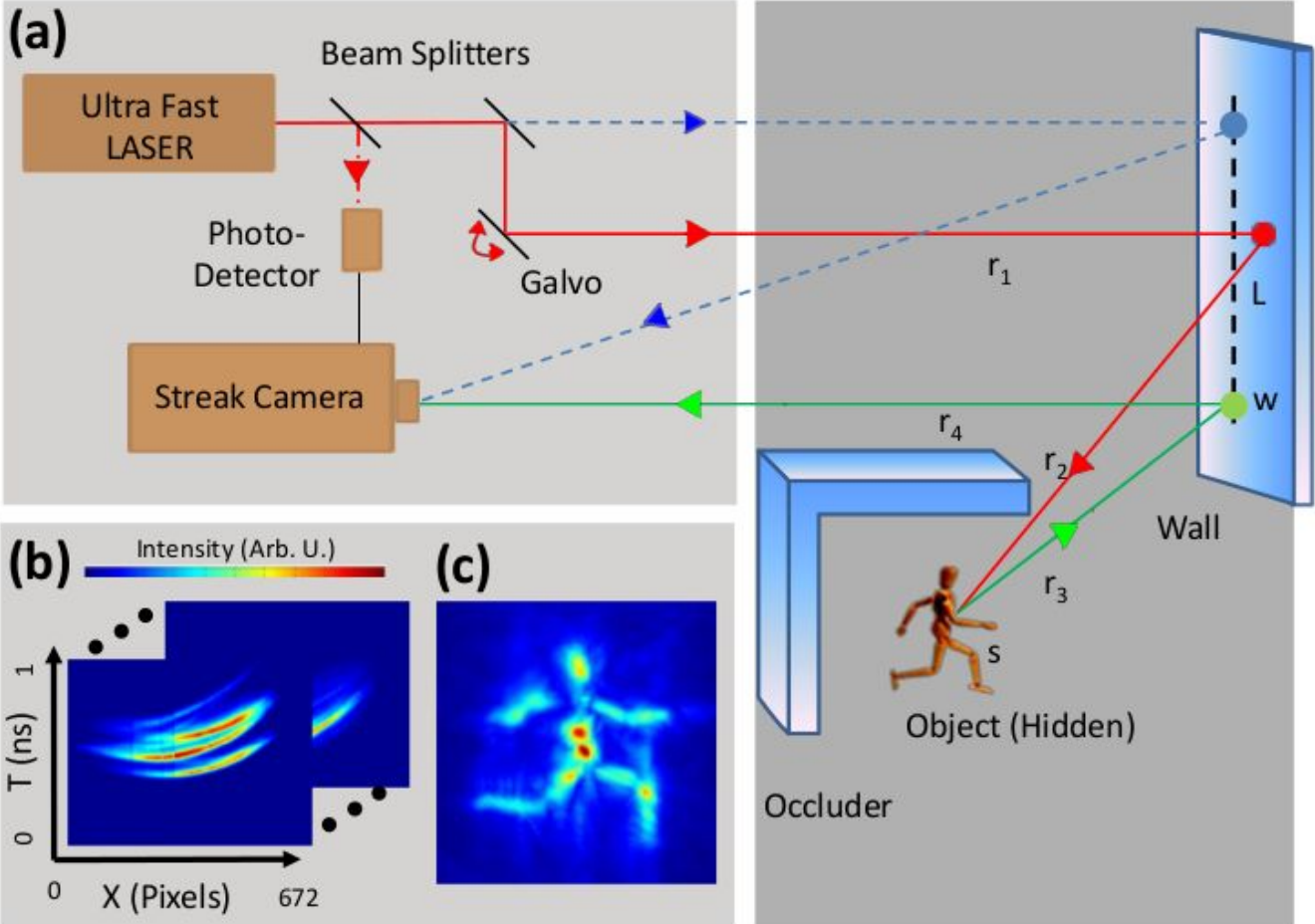




# Introduction

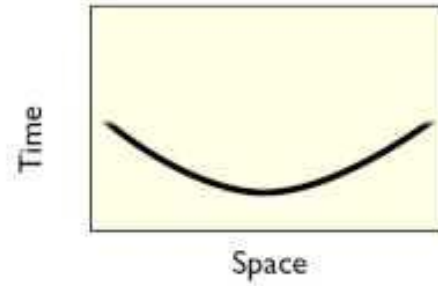
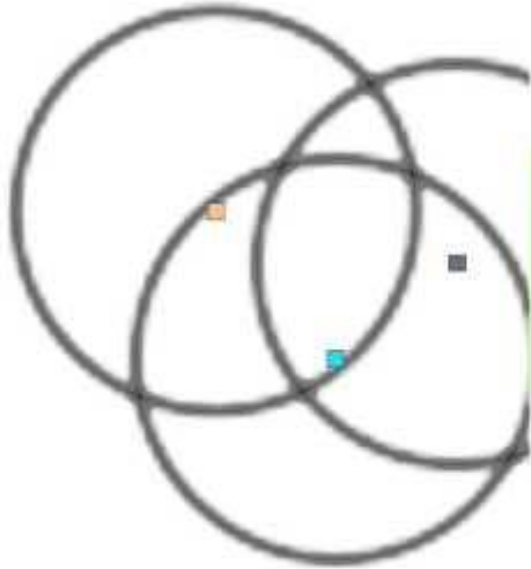


# Experimental Setup



# Reconstruction Algorithm

Each point on the hidden surface  $S$  will contribute a hyperboloid to the image







# Reconstruction

(b) Data acquisition

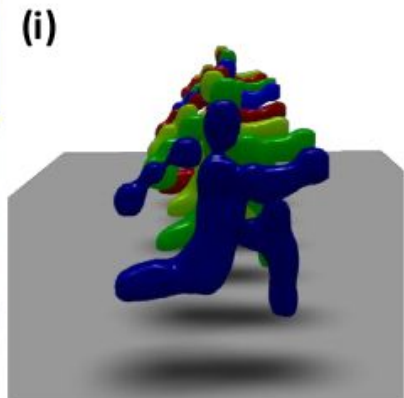
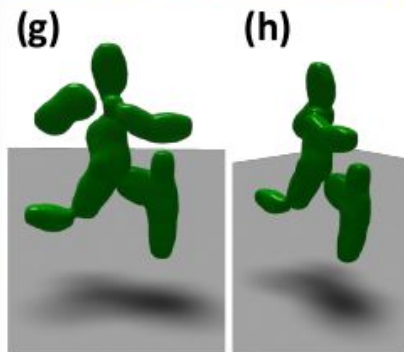
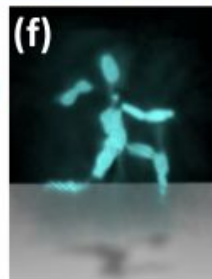
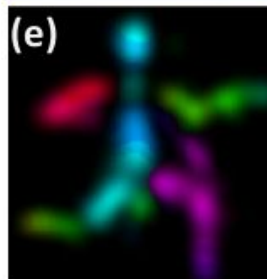
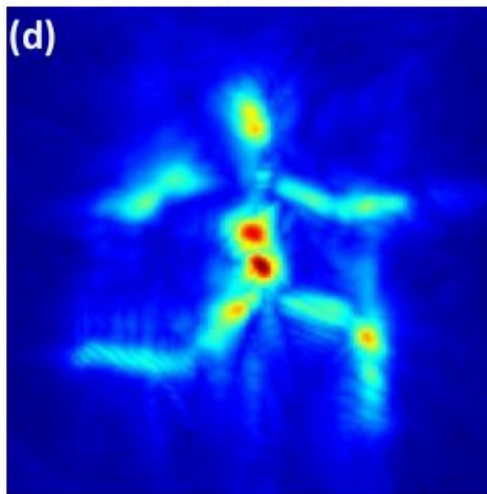
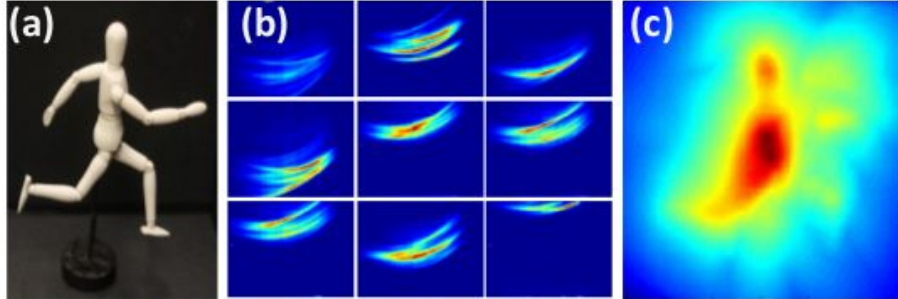
(c) Backprojection

(d) Filtering

(e) Depth map

(f) Confidence map

(g,h,i) 3D



# Overall Rating: 1

## Discussion(pros & cons)

Pros: Novel method to solve the problem of recovering hidden 3D object

Various application

Robust for Lambertian surfaces and near-Lambertian surfaces

Cons: Assumption: without inter-reflection within the object

Questions?