Video Challenge Problem
Multiple Biometric Grand Challenge
Preliminary Results of Version 1

05 December 2008

National Institute of Standards and Technology
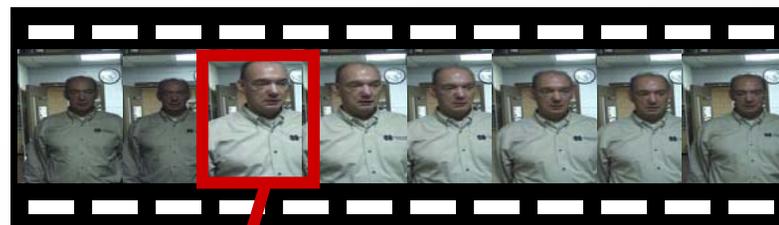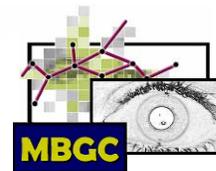
...working with industry to foster innovation, trade, security and jobs

NIST

Goals and Motivations

- Operational environment
  - Recognition from video.
  - Unconstrained illumination.
  - Unconstrained movement / pose.

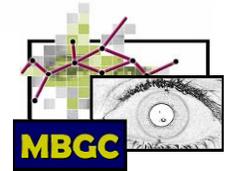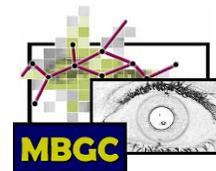# Meet the Data

- Two different mediums of video.
  - High definition video (1440 x 1080)
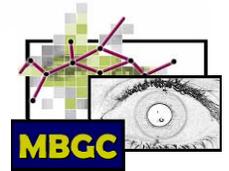 - Standard definition video (720 x 480)

Meet the Data

- ## Walking footage
  - Subject walks towards camera.

- ## Activity footage
  - Non-frontal footage of subject performing an activity.

- ## Footage taken concurrently in both standard definition and high definition.
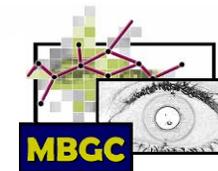
Video Challenge Breakout

- ## Walking vs. Walking
  - Both formats

- ## Walking vs. Activity
  - Both formats

- ## Activity vs. Activity
  - Both formats

Video Challenge Submissions

Organization	Legend
Lockheed Martin	FF
L-1 Identity Solutions AG	GG
Pittsburgh Pattern Recognition	II
SAGEM	DD

Walking vs. Walking

High Definition Video

197 sequences

High Definition Video

197 sequences

Standard Definition
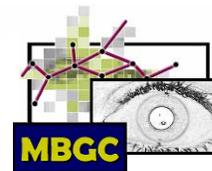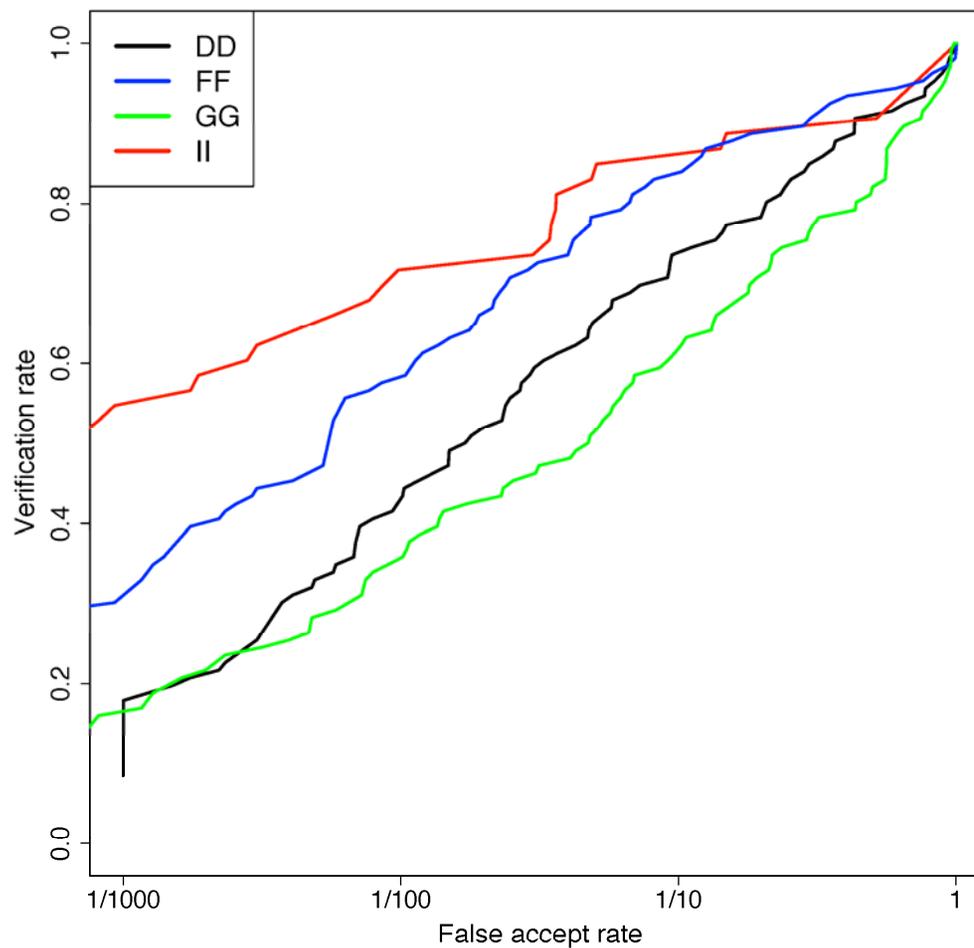
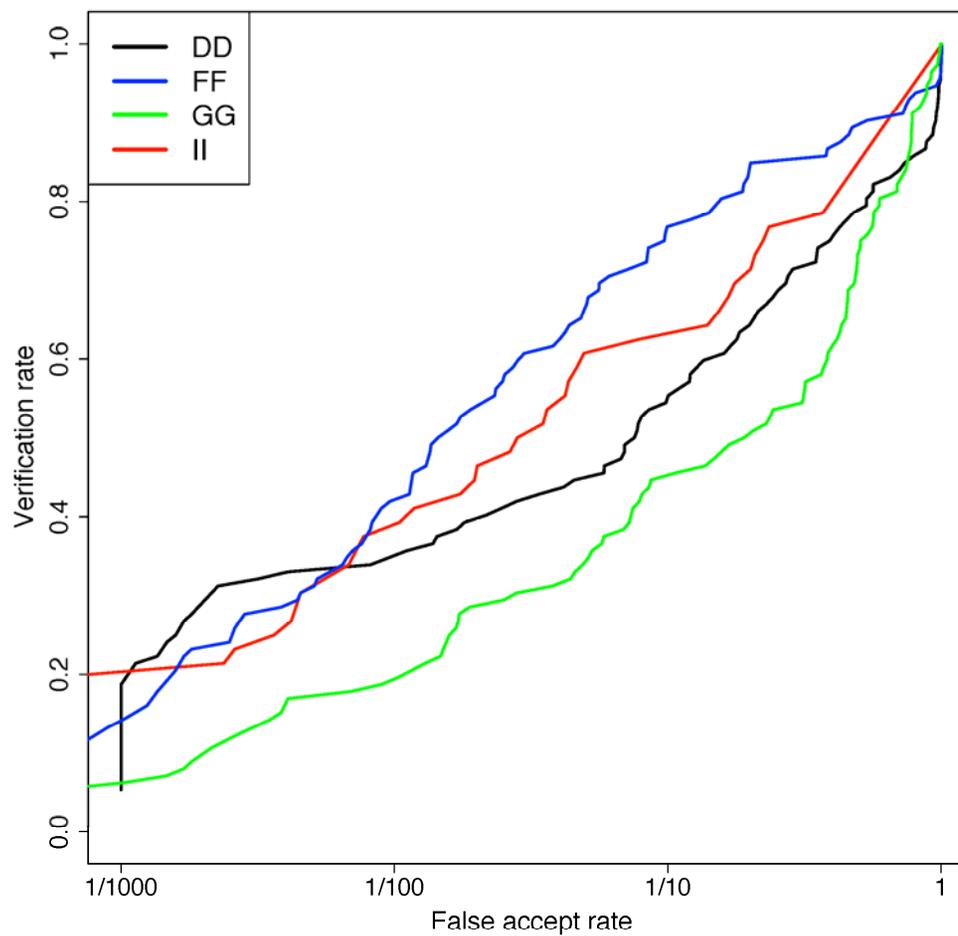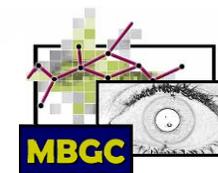202 sequences
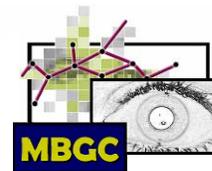

Standard Definition

202 sequences

High Definition ROC

Results from an Open Book Challenge Problem, NOT an Independent Evaluation

Standard Definition ROC

Summary Bar Graph
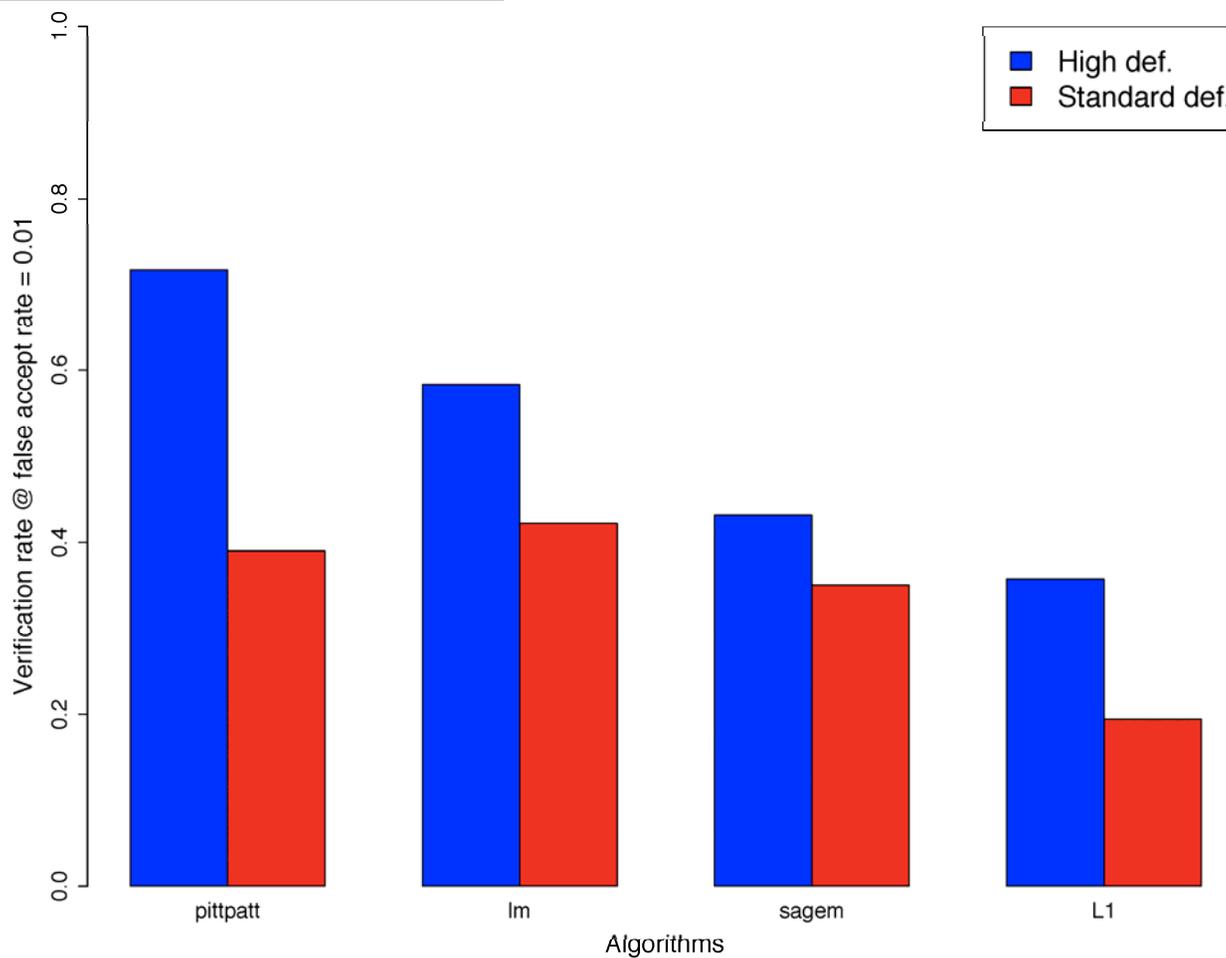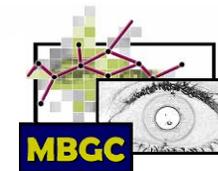
Plotted at FAR = 0.01

Results from an Open Book Challenge Problem, NOT an Independent Evaluation

Walking vs. Activity

Walking

399 sequences
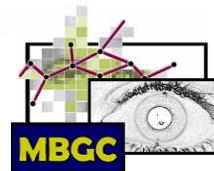
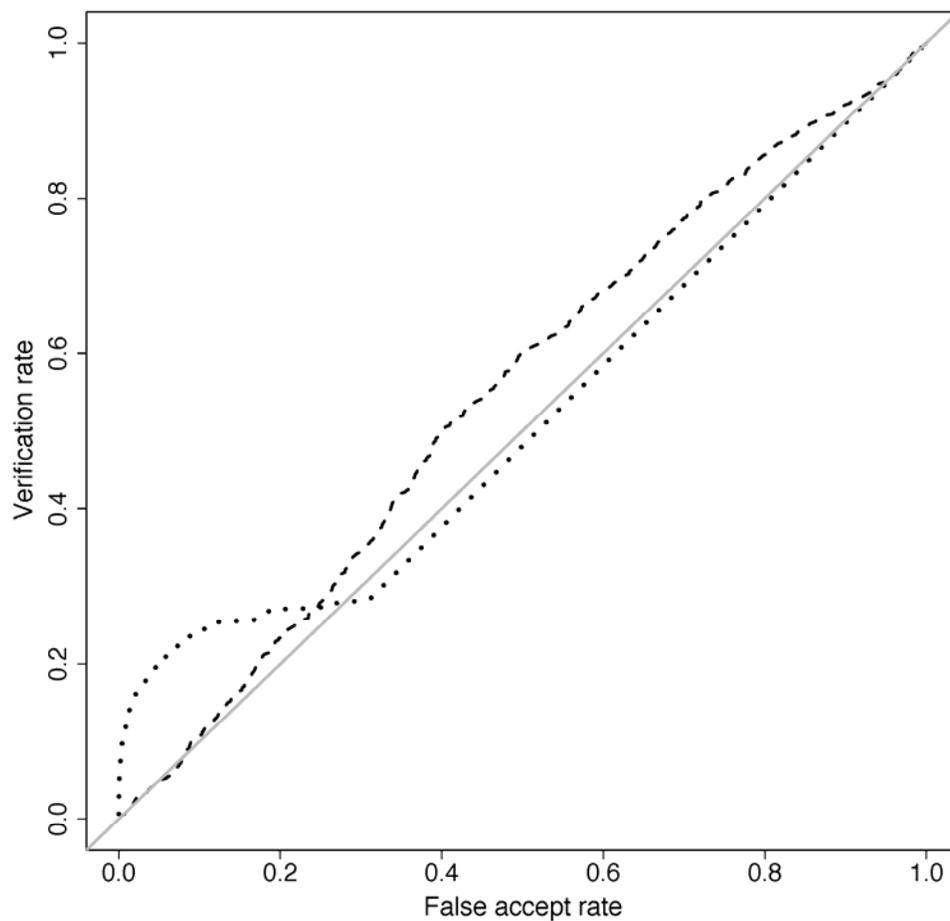Activity

371 sequences

Activity

371 sequences

Walking

399 sequences

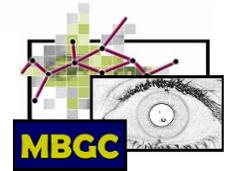Experiment uses both high definition and standard definition.

Walking vs. Activity ROC
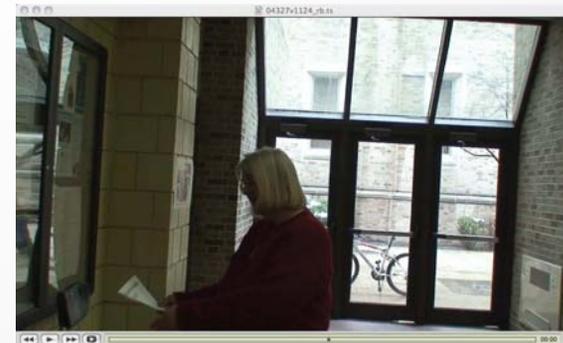
Activity vs. Activity
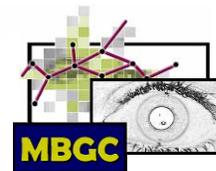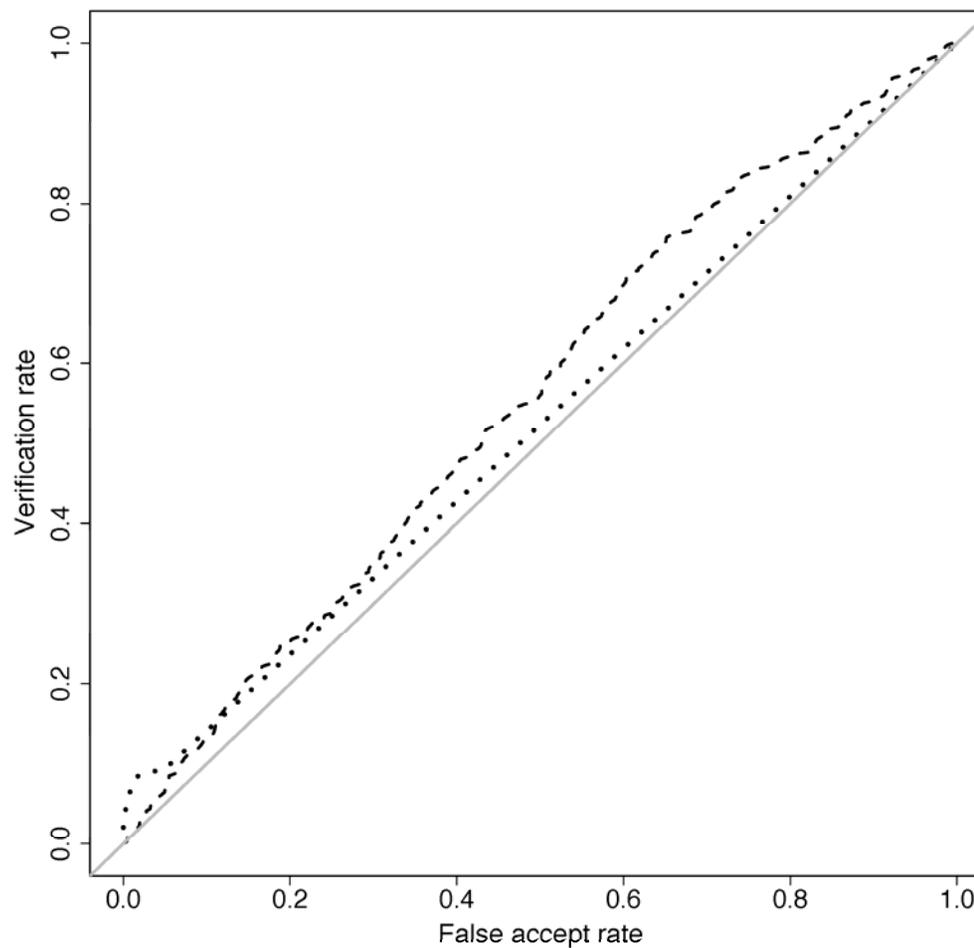
High Definition Video

High Definition Video
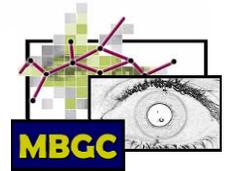

Standard Definition

Standard Definition

Experiment uses both high definition and standard definition.
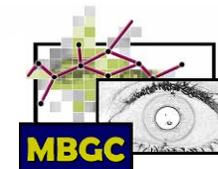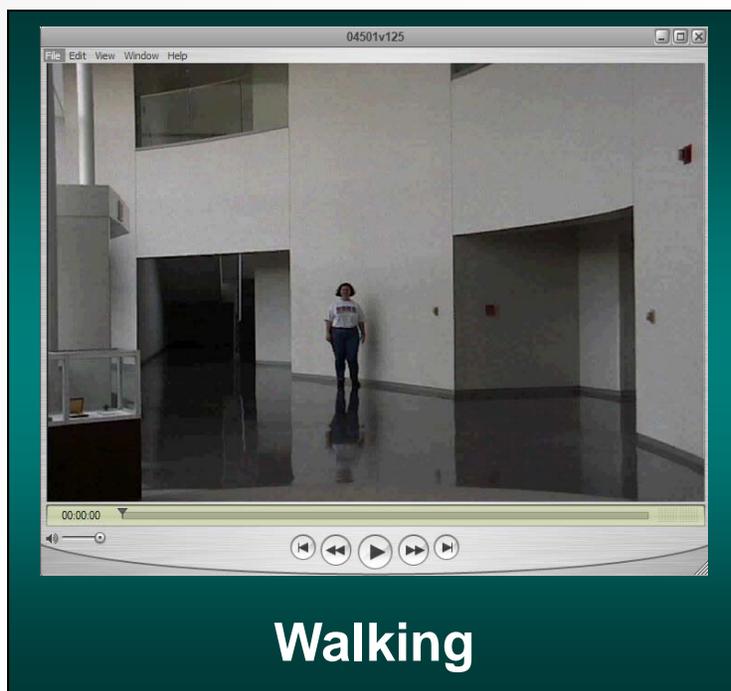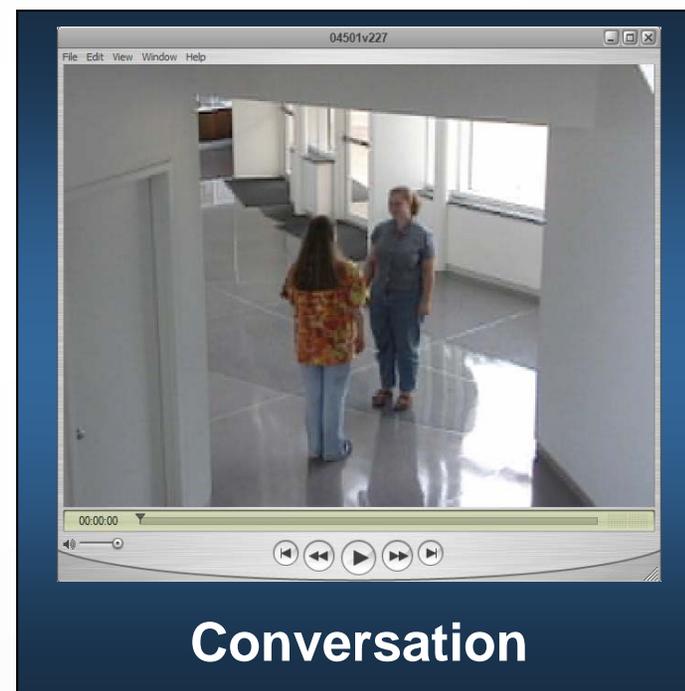
Activity vs. Activity ROC

Conclusions

- Performance was better on high definition than standard definition.

- Highlights new challenges.

- Algorithms cannot handle non-frontal activity.

Next steps experiment:

Walking

Conversation

Target   Query