MBGC

Multiple Biometric Grand Challenge

Still Face Challenge Problem
Multiple Biometric Grand Challenge
Preliminary Results of Version 2

04 December 2009

Still Face Background

- FRVT 2006
  - Verification rate =.99 at FAR =0.001
  - Frontal
  - Controlled illumination
  - High resolution (400 pixels between the eyes)
  - Large scale laboratory collection
  - 6 MP camera

MBGC Still Face Goals

- Many applications of still face involve:
  - Unconstrained illumination
  - Non-frontal
- ICAO Passport Standard
  - Low resolution (90-120 pixels between the eyes)
  - Compressed imagery (8KB to 20KB)

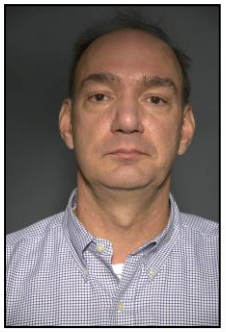
MBGC Still Face Goals

- Many applications of still face involve:
  - Unconstrained illumination
  - Low resolution
  - Compressed imagery
  - Non-frontal

MBGC Still Face challenge problem addresses these constraints.

Still Face

- Two target sets – AY03-04 (FRGC)
  - Controlled illumination frontal
  - Uncontrolled illumination frontal



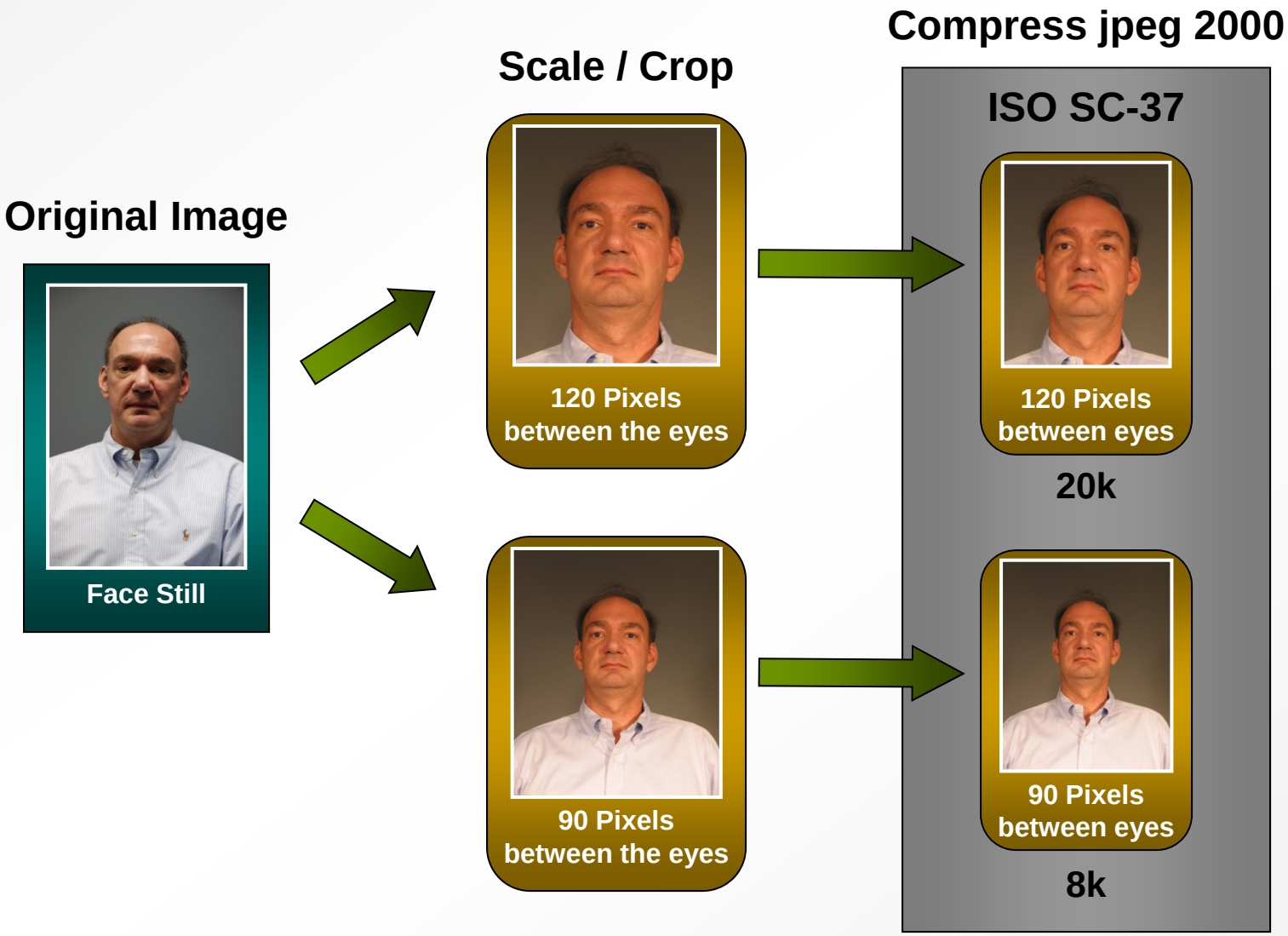
- One query set – AY04-05
  - Uncontrolled illumination frontal
  - Uncontrolled illumination non-frontal

Effects of Lower Resolution and Compression on FR

- Determine effect of
  - Lower resolution
  - Compression

- Process original images to meet data requirements
  - Scale and crop
    - 120 and 90 pixels between the eyes
  - Compress images
    - 20KB and 8KB

Still Face Processing



Results from Still Face Challenge Problem…

Participants 2009

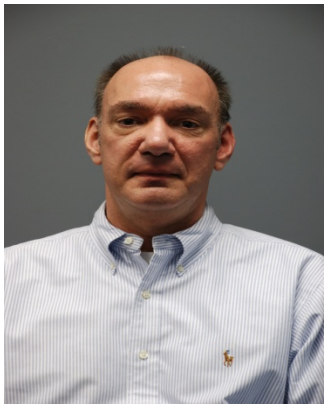
Legend
Dalian UT
L1
PittPatt
NEC

- Dalian University of Technology
- L-1 Identity Solutions AG
- Pittsburgh Pattern Recognition
- NEC Corporation

Controlled vs. Uncontrolled

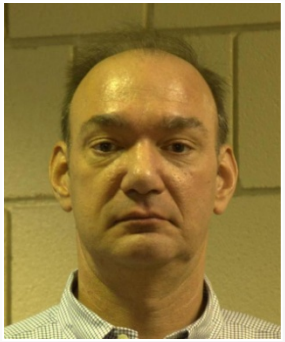
Number of Images
16,028

Number of Images
10,687

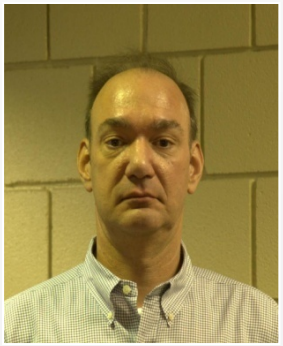


No Compression

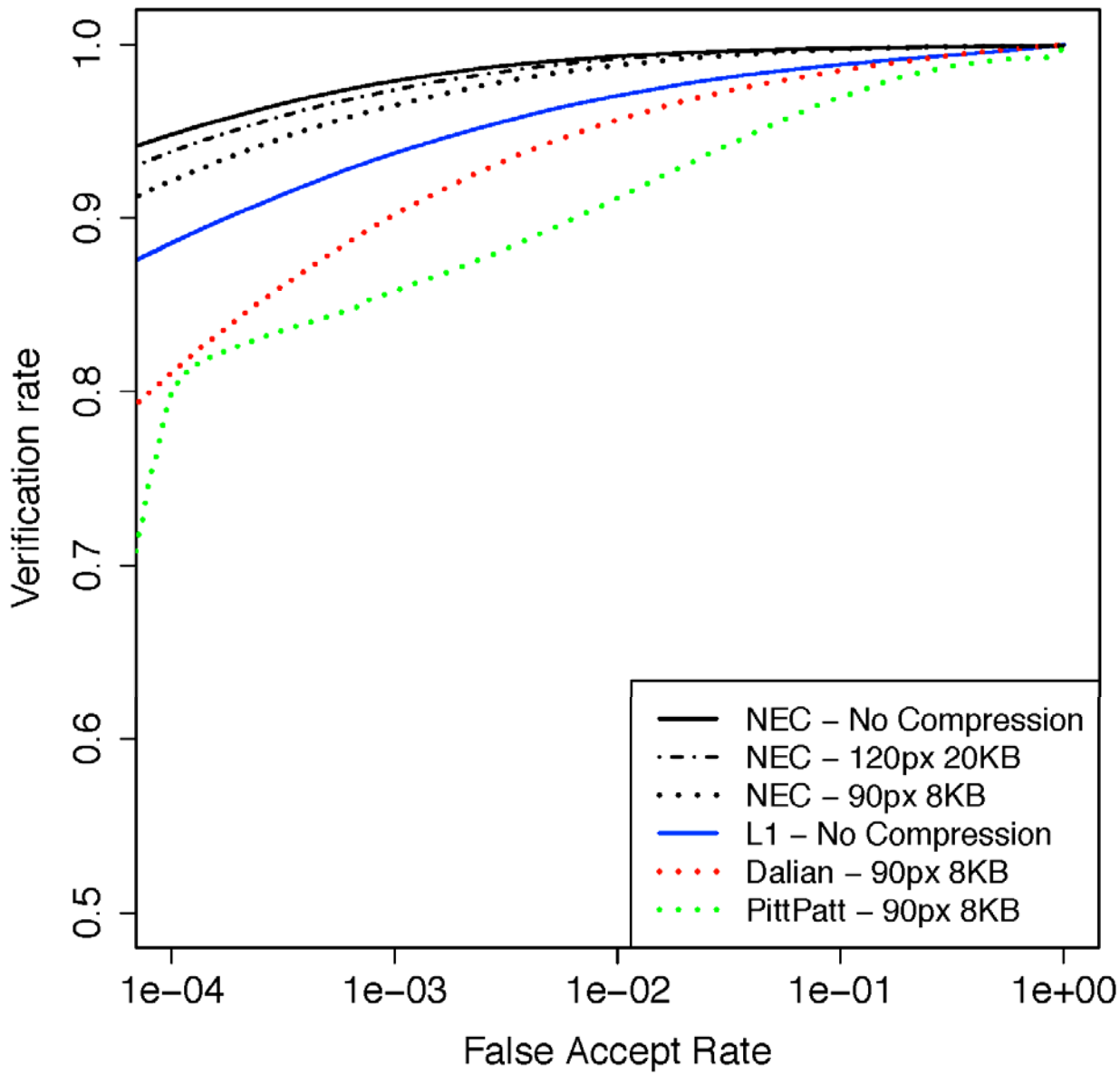
Compression
120 pixels
20 KB



Compression
90 pixels
8 KB



Controlled vs. Uncontrolled Frontal



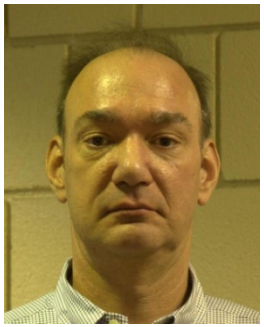
Results from an Open Book Challenge Problem, NOT an Independent Evaluation

Uncontrolled vs. Uncontrolled

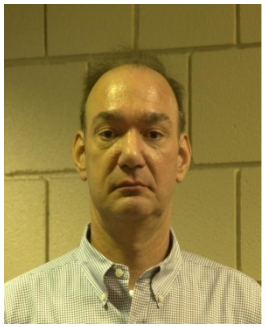
Number of Images
8,014

Number of Images
10,687

No Compression

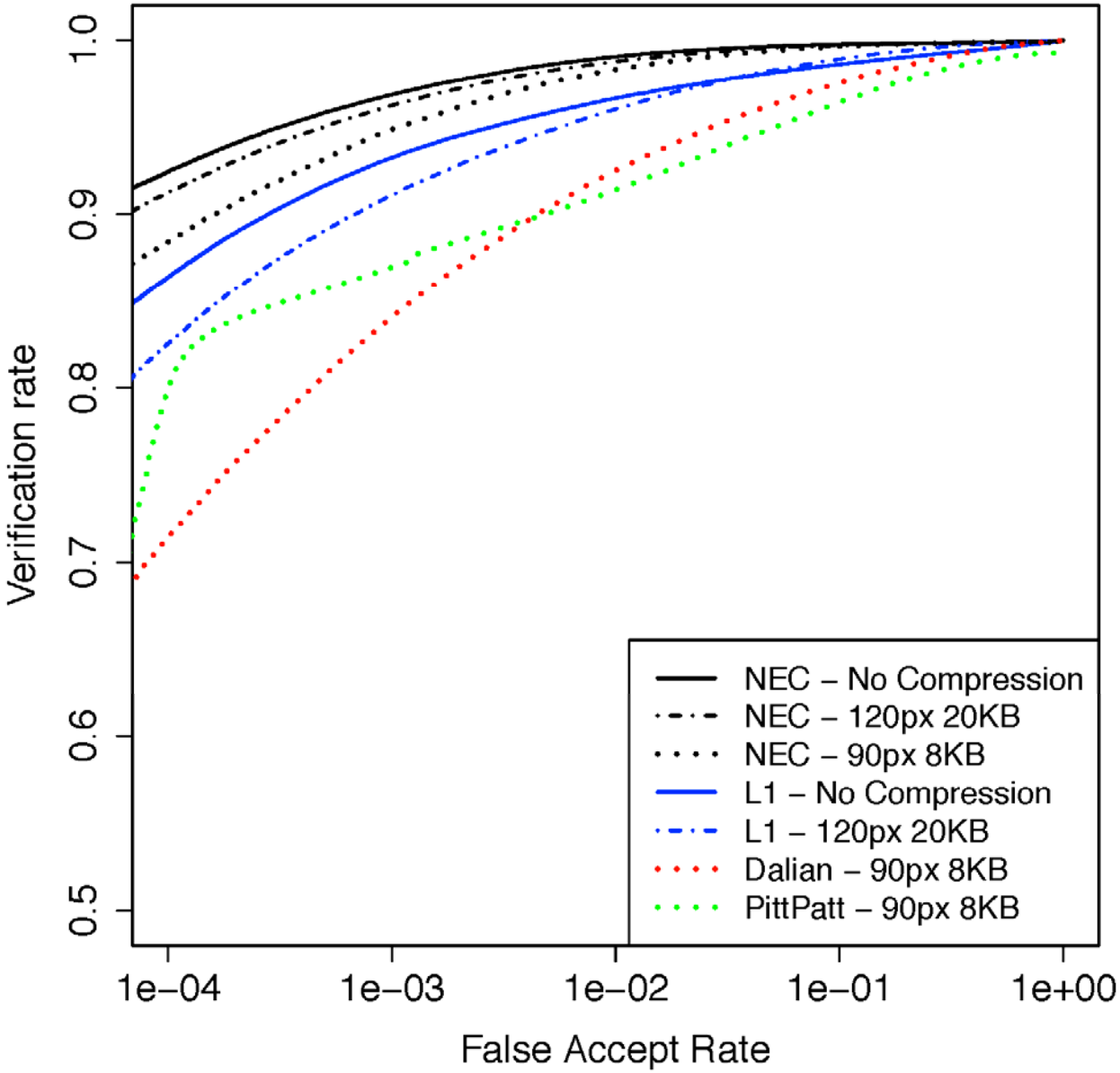


Compression
120 pixels
20 KB



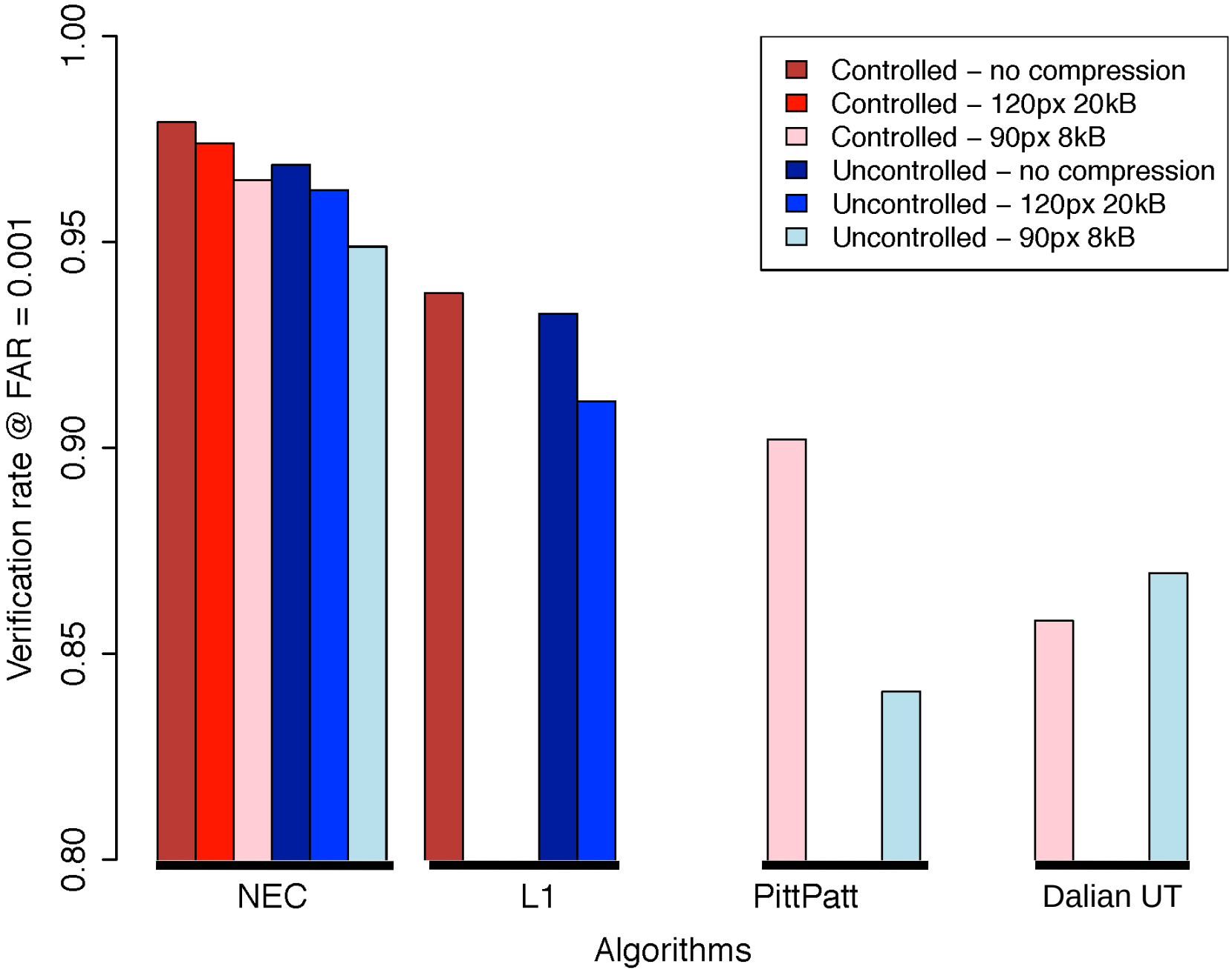
Compression
90 pixels
8 KB

Uncontrolled vs. Uncontrolled ROC



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

Summary Frontal



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

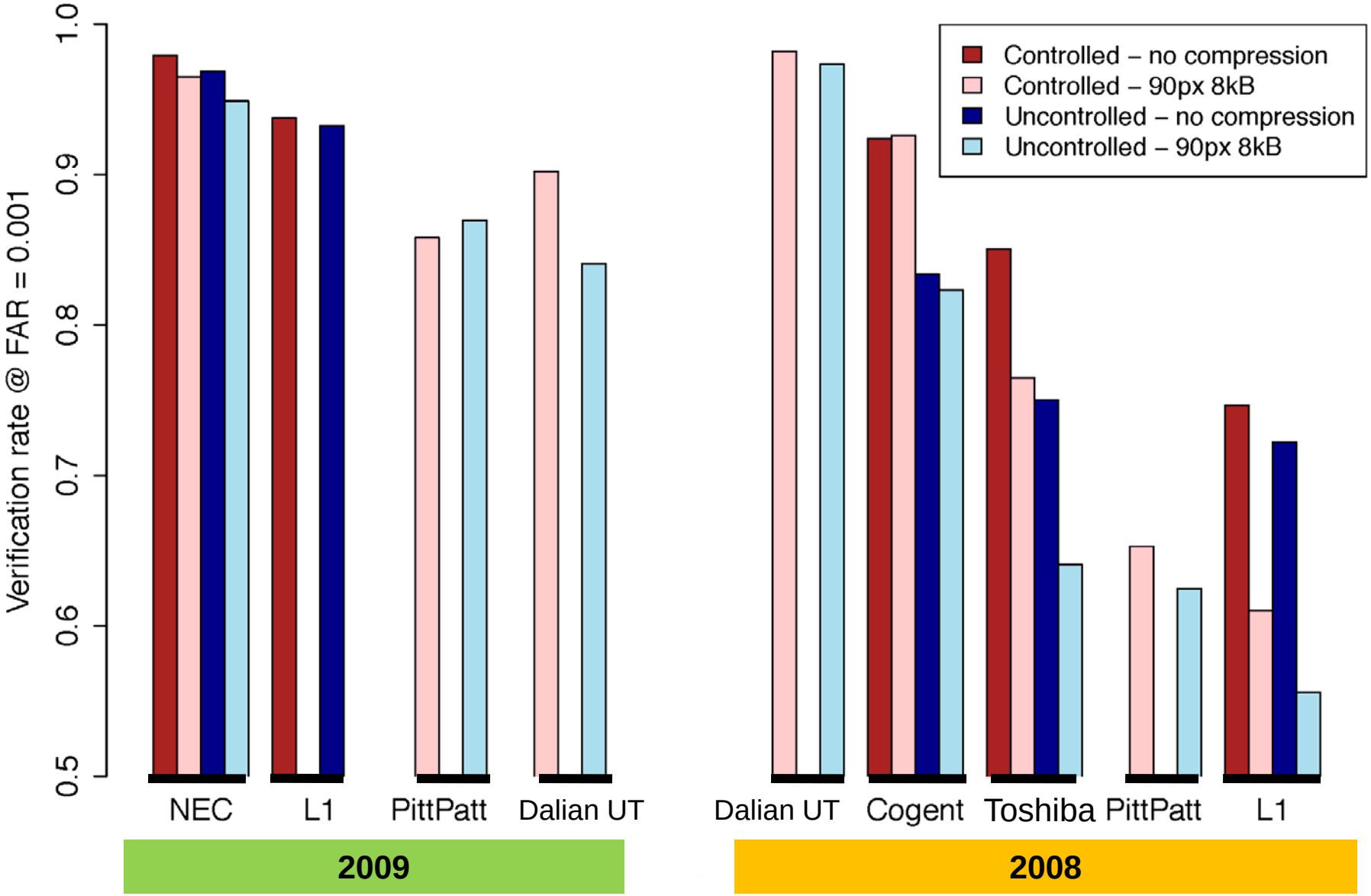
2008 to 2009 Summary

- Progress since December 2008
- Challenge remained the same
  - Data
  - Experiments

2009 & 2008 Participants

	2008	2009
• Dalian University of Technology	Dalian UT	Dalian UT
• L-1 Identity Solutions AG	L1	L1
• Pittsburgh Pattern Recognition	PittPatt	PittPatt
• NEC Corporation		NEC
• Cogent Inc.	Cogent	
• Toshiba Corporation	Toshiba	

Summary 2009 / 2008



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

Frontal vs. Non-frontal

Controlled

Number of Stills

16,028

Uncontrolled

Number of Stills

8,014

Uncontrolled

Number of Still Images

3,097

Uncontrolled

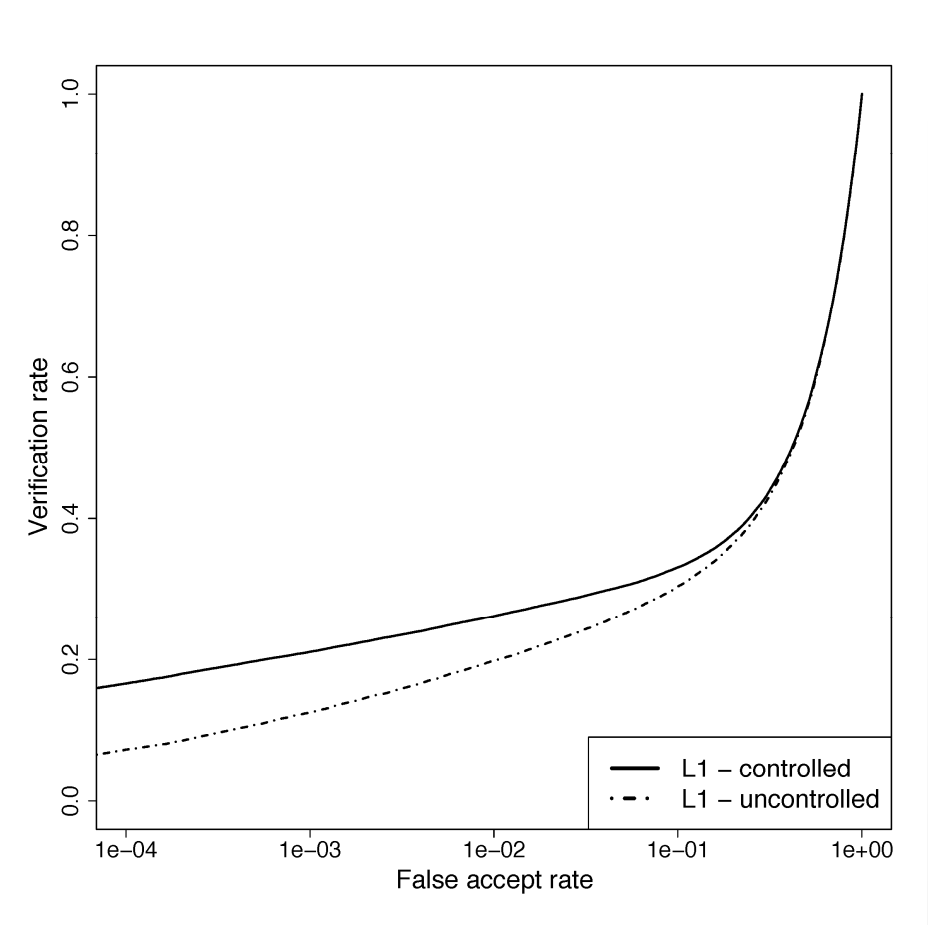
Frontal vs. Non-Frontal ROC

NO SUBMISSIONS

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

Frontal vs. Non-Frontal ROC

Reigning Champions from MBGC V1 2008



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

Summary

- Increase in performance.
- Smaller uncontrolled effect.
- Smaller compression effect.
- Cross pose matching is very difficult.