

Meta-Analysis of Biometrics Research & FRVT 2005 Announcement

Dr. P. Jonathon Phillips

National Institute of
Standards and Technology



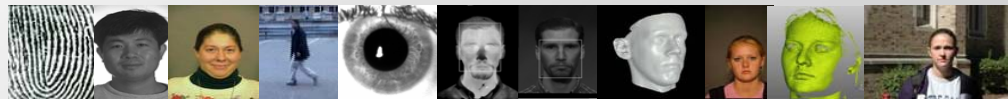
NIST

Definition of Meta-analysis

- Meta-analysis: the quantitative synthesis or analysis of results from **multiple** experiments or studies
- The key is **multiple**

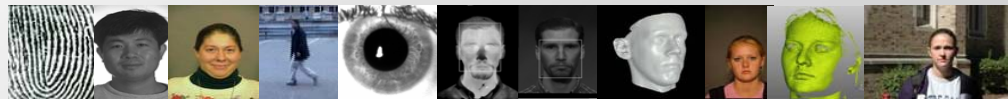
Assessment

- Meta-Analysis Studies
 - Biometrics - preliminary
 - Phillips, 2005
 - Face Recognition
 - Phillips and Newton, Face & Gesture 2002
 - Speaker Recognition
 - Not Analyzed

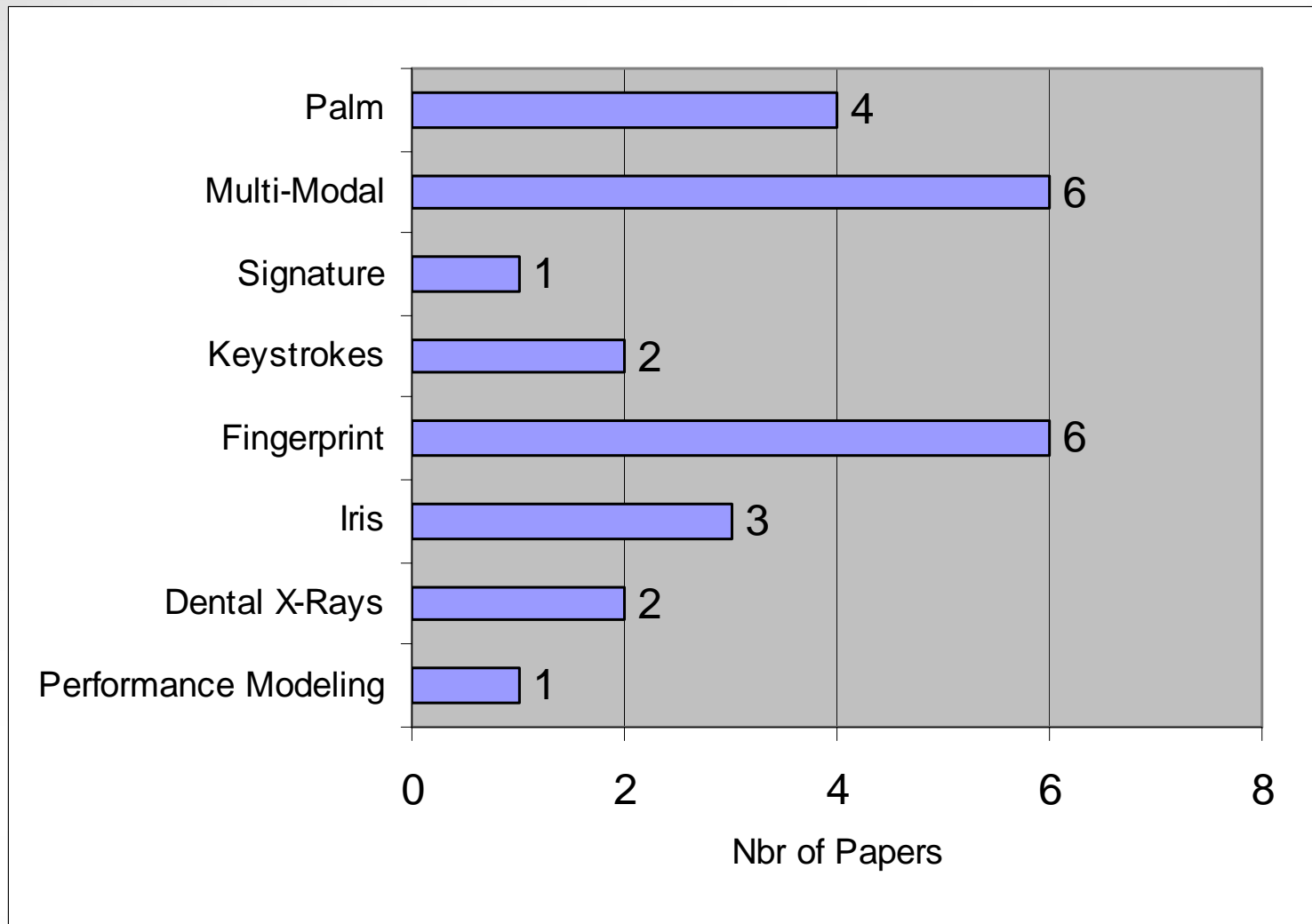


Biometric Meta-Analysis

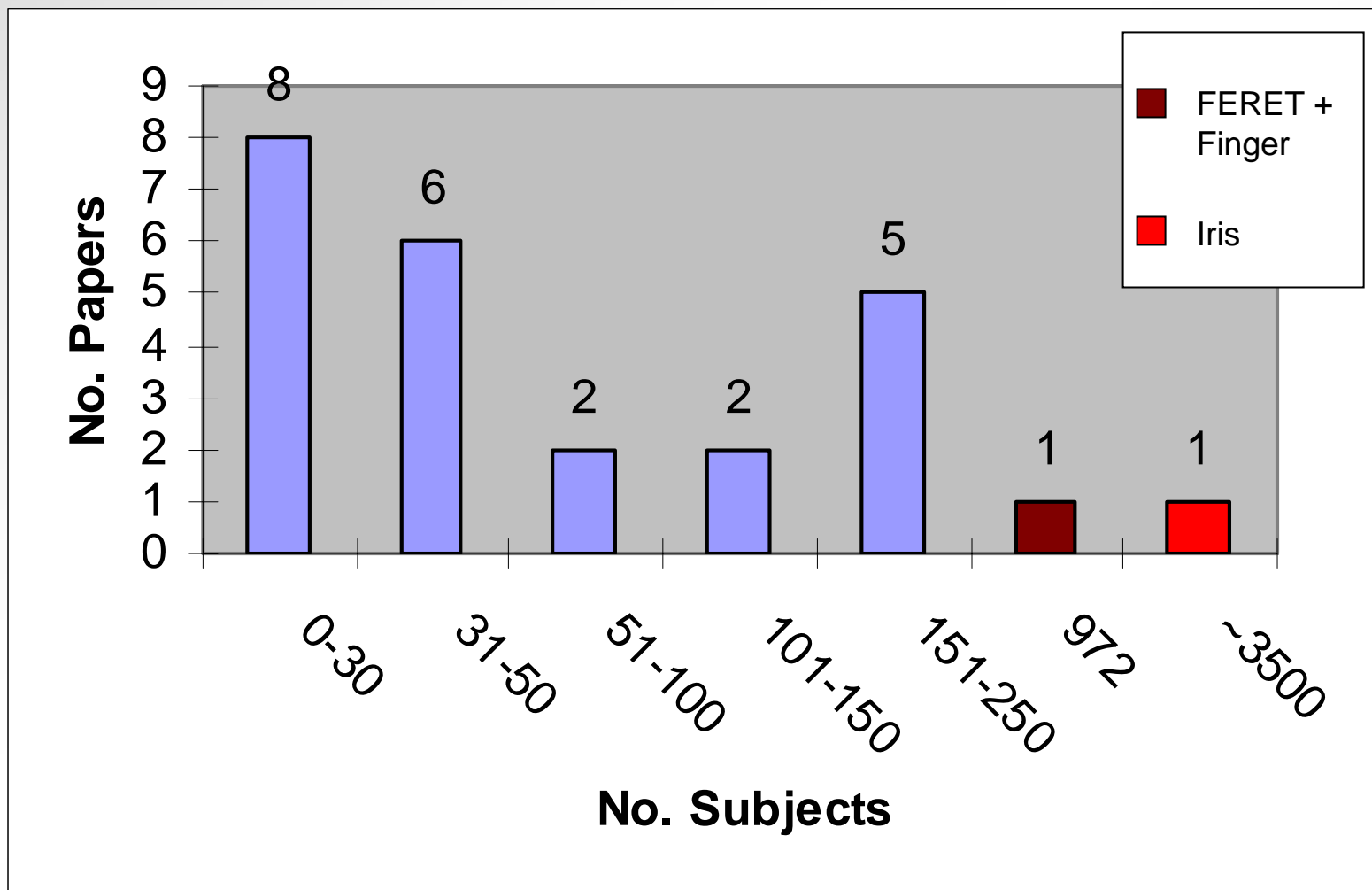
- Published 2003, 2004, and 2005
- Appeared in
 - IEEE transaction
 - Study Committee members journal pubs
- Recognition performance reported
- No face and speaker recognition



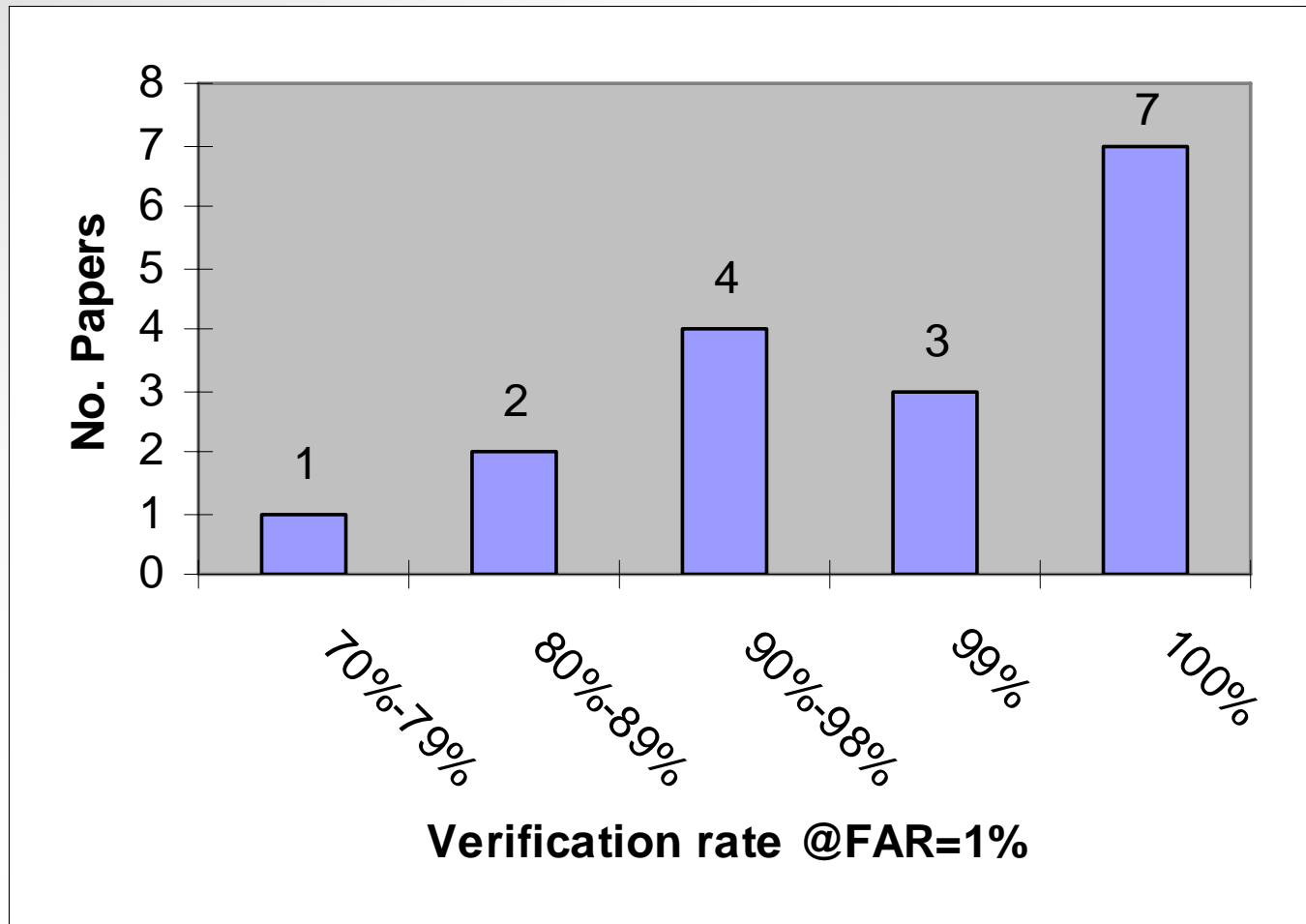
Biometric Categories (25 Papers)



Data Set Size

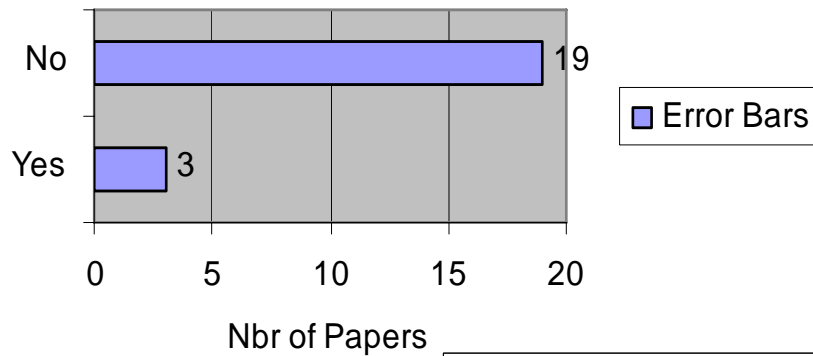


Performance Summary

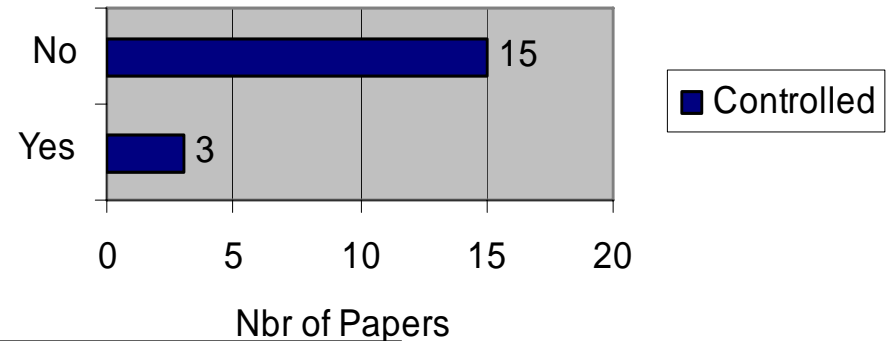


Experimental Design Critique

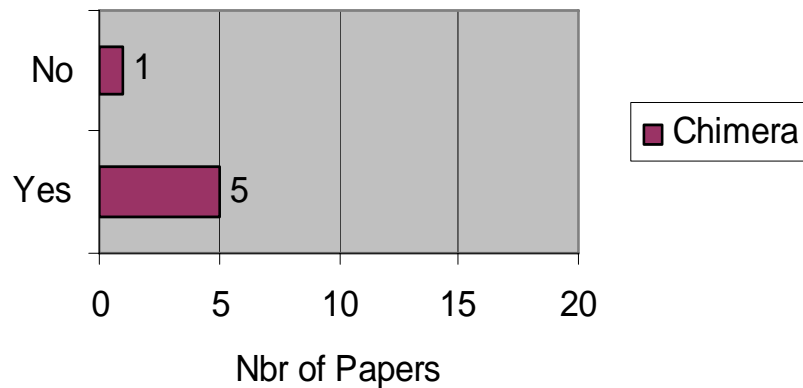
Error Bars



Controlled



Synthetic / Chimera Multi-Modal Data

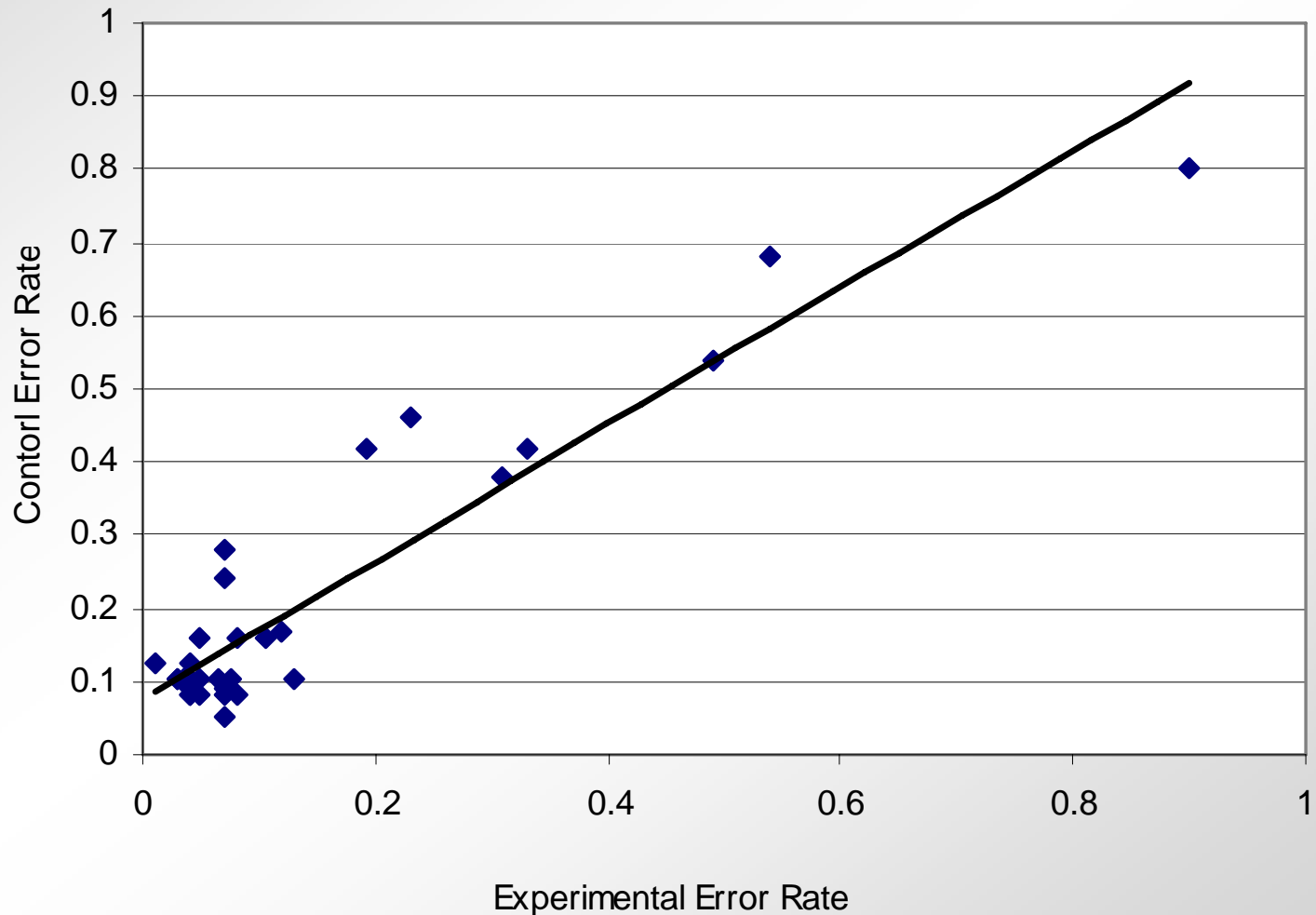




Face Recognition Meta-Analysis

Meta-analysis of Face Recognition

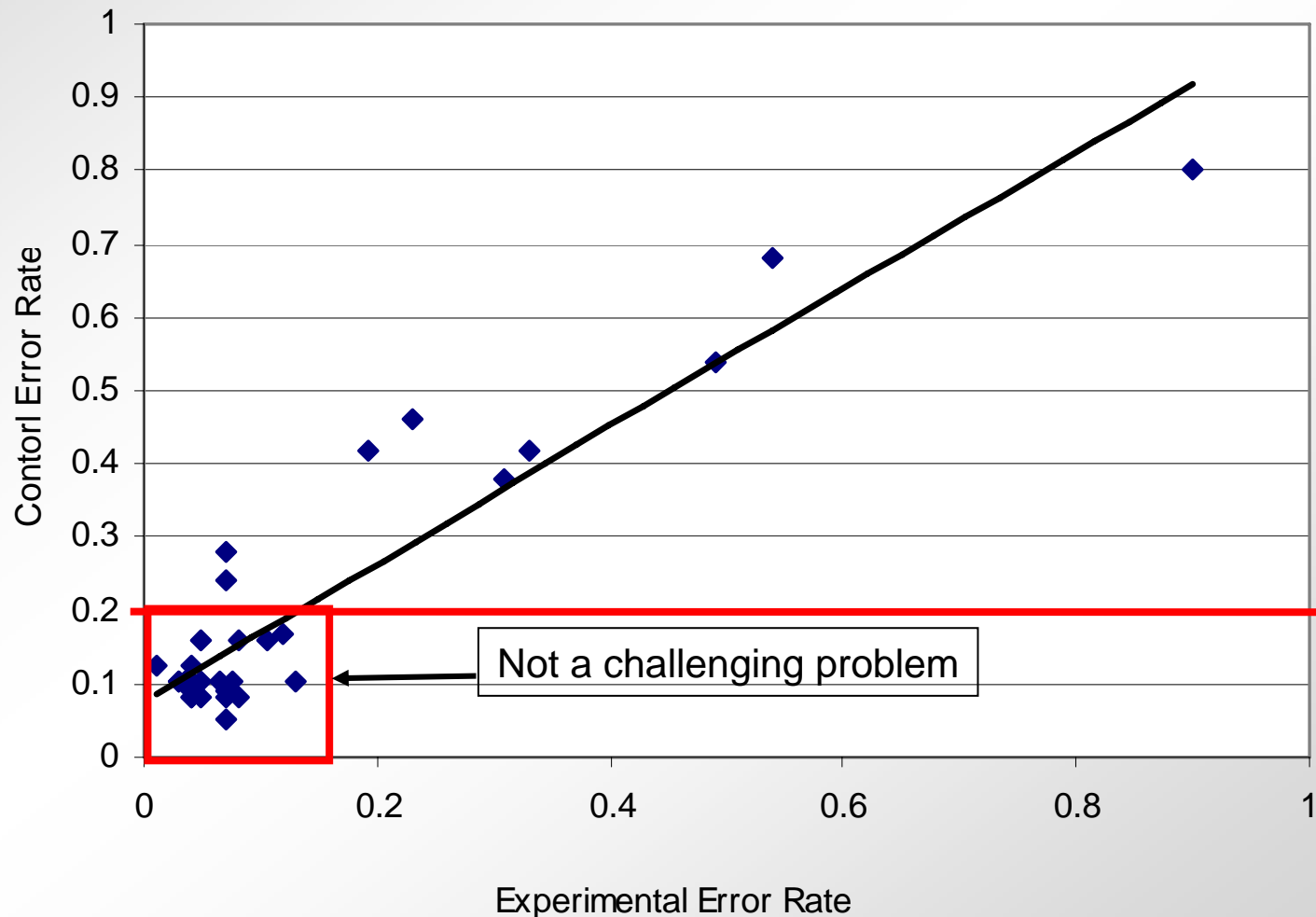
Scatter plot of experimental versus control algorithms



Phillips and Newton, Face & Gesture (2002)

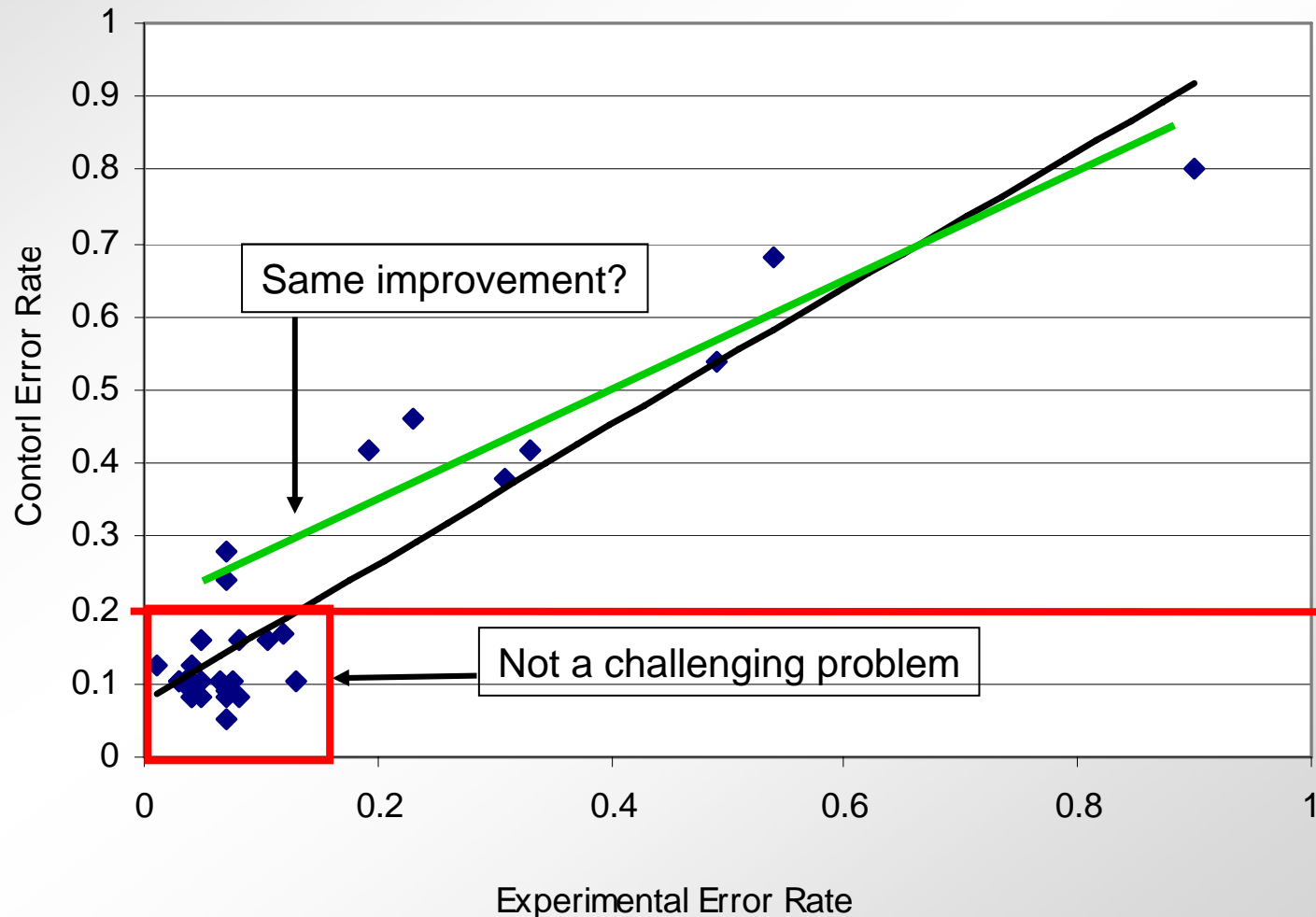
Meta-analysis of Face Recognition

Scatter plot of experimental versus control algorithms



Meta-analysis of Face Recognition

Scatter plot of experimental versus control algorithms



Three Months Reflection

Significant Progress

- Controls
- Statistical methods
- Statistical significance/error bars
- Large data sets
- Challenge problems
- Independent evaluations

Possible Solutions

- Journals
 - Consistent reviewing policy
 - Repeatability, documentation of experiments
 - Executables
- Challenge problems
 - Publicly available data set
 - Independent evaluations
- Government
 - Documentation of funded research
 - Documentation of proposed research

Face Recognition Vendor Test



Face Recognition Vendor Test



FRVT 2006

- FRVT 2006 starts Monday, 30 Jan 2006
- Release Protocol - Friday, 7 Oct 2005
- Release FRGC Supplemental Data - Friday, 7 Oct 2005

FRVT 2006

- Key points of FRVT 2006 Protocol
 - Executable test
 - Windows XP
 - Linux
 - Considering Matlab
 - Interface based on BEE