

Questions for Charles H. Romine
Director, Information Technology Laboratory
National Institute of Standards and Technology

June 4, 2019, Hearing:
"Facial Recognition Technology (Part II): Ensuring Transparency in Government Use"

Questions from Chairman Elijah E. Cummings

1. How many full-time employees at the National Institute of Standards and Technology (NIST) work on the facial biometric standards?

NIST Response: NIST has 1 full-time employees working on face biometric standard.

2. How many NIST full-time employees work on the facial recognition vendor tests?

NIST Response: A total of 4 full-time employees are involved in facial recognition testing at NIST. Three full-time employees conduct the facial recognition vendor tests and a fourth full-time employee provides infrastructure support.

3. How much of NIST's facial recognition testing and benchmark creation:

- a. is outsourced or done in partnership with outside entities, for example university collaborators?

NIST Response: NIST's facial recognition testing and benchmark creation is done by NIST. Some datasets have been curated by other agencies (e.g. Department of Homeland Security, Department of Justice), or contractors within other government agencies, or by universities using their own funds. NIST further processes those curated datasets to design particular tests around them.

- b. is performed fully by NIST?

NIST Response: All of the test design, administration, execution, analysis and reporting is done by full-time NIST employees.

4. If NIST outsources any of its facial recognition testing and benchmark creation, what are the factors that lead to the outsourcing?

NIST Response: NIST does not outsource any of its facial recognition testing and benchmark creation.

5. Dr. Romine indicated during the June 4 facial recognition hearing that NIST plans to release a report regarding the demographic effects on facial recognition algorithm accuracy in the fall of 2019.

- a. Please describe past delays to the release of the NIST demographic effects on facial recognition report and the reasons for these delays.

NIST Response: Since 2017, NIST has published information on demographic effects in face recognition to developers. NIST revised the timeline for release of its latest report on demographic effects in face recognition because of the lapse in funding from late December 2018 to late January 2019; and the increase in size of the test -- both in terms of new datasets that have been incorporated into Face Recognition Vendor Test (FRVT), and the number of algorithms to be tested.

- b. Is the demographic effects report still expected to be released in the fall of 2019?

NIST Response: Yes.

- c. What level of involvement do companies like Amazon and Microsoft have with the demographic effects reporting process?

NIST Response: Companies are not involved in analyses or reporting. Microsoft has submitted algorithms to NIST FRVT for evaluation. Amazon has not submitted algorithms to NIST FRVT.

- d. Are companies notified of the results of NIST's findings?

NIST Response: Yes. We email developers who participated in NIST FRVT directly. We also maintain an email subscription service to provide updates.

- e. Will the report include phenotypic characteristics such as skin reflectance?

NIST Response: In the short run, no. Skin reflectance is a physical quantity that is not easy to estimate from operational data. It can be estimated if the photos were acquired with particular controls on the imaging system. It is best measured by using a dedicated instrument at the time of collection. To this end, NIST may be able to access images collected by the Department of Homeland Security from a volunteer population photographed in a laboratory. Other phenotypic quantities are not well known or easy to estimate.

- f. Will the report include intersectional accuracy?

NIST Response: Yes, it will.

Questions for Charles H. Romine
Director, Information Technology Laboratory
National Institute of Standards and Technology

June 4, 2019, Hearing:
"Facial Recognition Technology (Part II): Ensuring Transparency in Government Use"

Questions from Rep. Thomas Massie

1. You testified that NIST testing has shown that facial recognition algorithms can be 99 to 99.7 percent accurate. Please clarify whether those accuracy rates apply to false negatives or false positives.

NIST Response: The 99.7 percent value is a true positive identification rate, corresponding to a false negative identification rate of 0.3 percent. Neither of these numbers quantify a false positive identification rate.