Research Methods in computer science

Fall 2015

Lecture 7

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September 16, 2015

Agenda

HW3 Live Evaluation

Conference Organization

Experiments

HW4

Conference Organization

Different roles

- General Chair
- Finance Chair
- Arrangement Chair
- Technology Chair
- Program Chair
- Publication Chair
- Technical Program Committee

Schedule for activities

Experiments

Hypothesis

Scenarios

Measurements

Conclusions

Types of Experiments

Model / Analysis

Simulations

Testbed (Real word ^{lite})

“Real world”

Which one to use when?

Metric

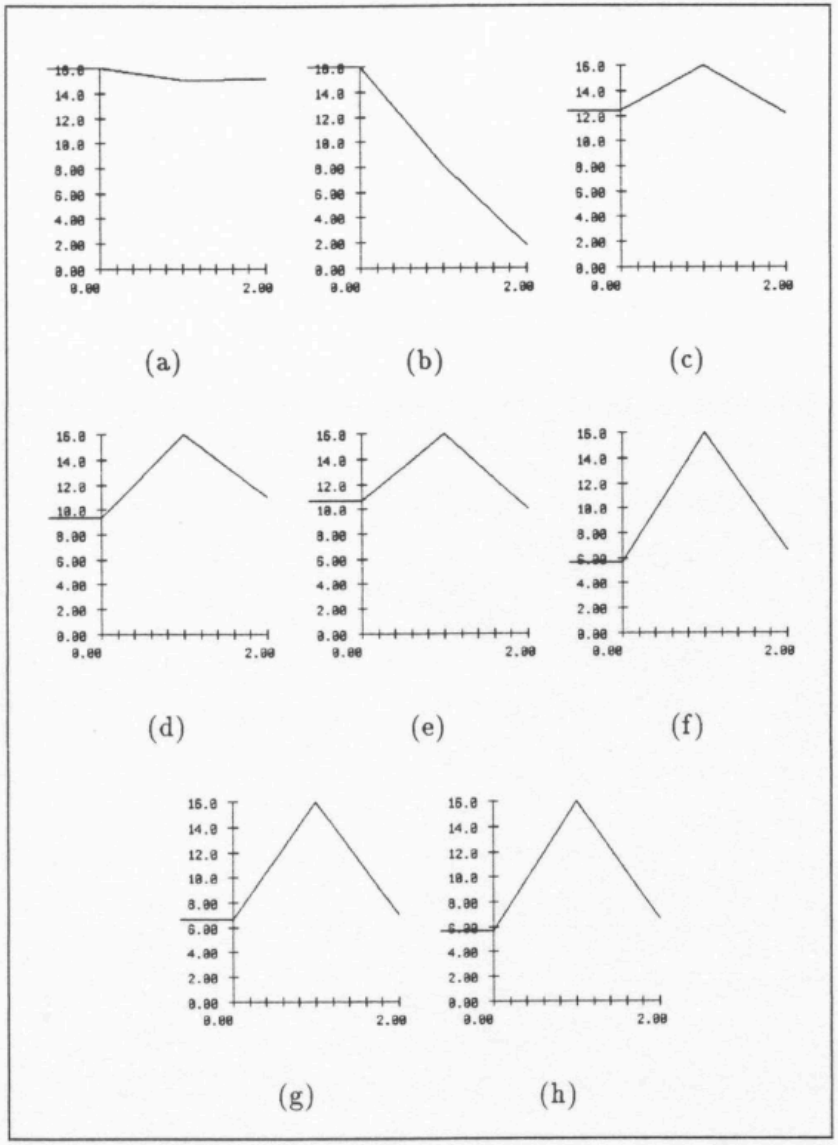
Why do we want to measure?

What to measure?

Eigenfaces for Recognition

[Turk ’91]

“We have developed a near-real-time computer system that can locate and track a subject’s head, and then recognize the person by comparing the characteristics of the face to those of known individuals.”



Scenarios and metrics from [Turk '91]

Figure 9. Results of experiments measuring recognition performance using eigenfaces. Each graph shows averaged performance as the lighting conditions, head size, and head orientation vary—the *y*-axis depicts number of correct classifications (out of 16). The peak (16/16 correct) in each graph results from recognizing the particular training set perfectly. The other two graph points reveal the decline in performance as the following parameters are varied: **(a)** lighting, **(b)** head size (scale), **(c)** orientation, **(d)** orientation and lighting, **(e)** orientation and size (#1), **(f)** orientation and size (#2), **(g)** size and lighting, **(h)** size and lighting (#2).

HW4

Understand and describe the metrics and experiments used in the papers related to your research. Details on the course website.