

# Pingmei Xu

## Motivations

### **Data Collection**

- 1. Traditional eye tracking requires special hardware.
- 2. Collecting data is expensive, tedious, slow.
- 3. Data cannot be collected from crowd sourcing platform, e.g. AMT.

### **Dataset & Benchmark**

- 1. Small datasets limit the potential for training data intensive algorithm
- 2. Benchmark can be easily overfit.

# **Our Approach**

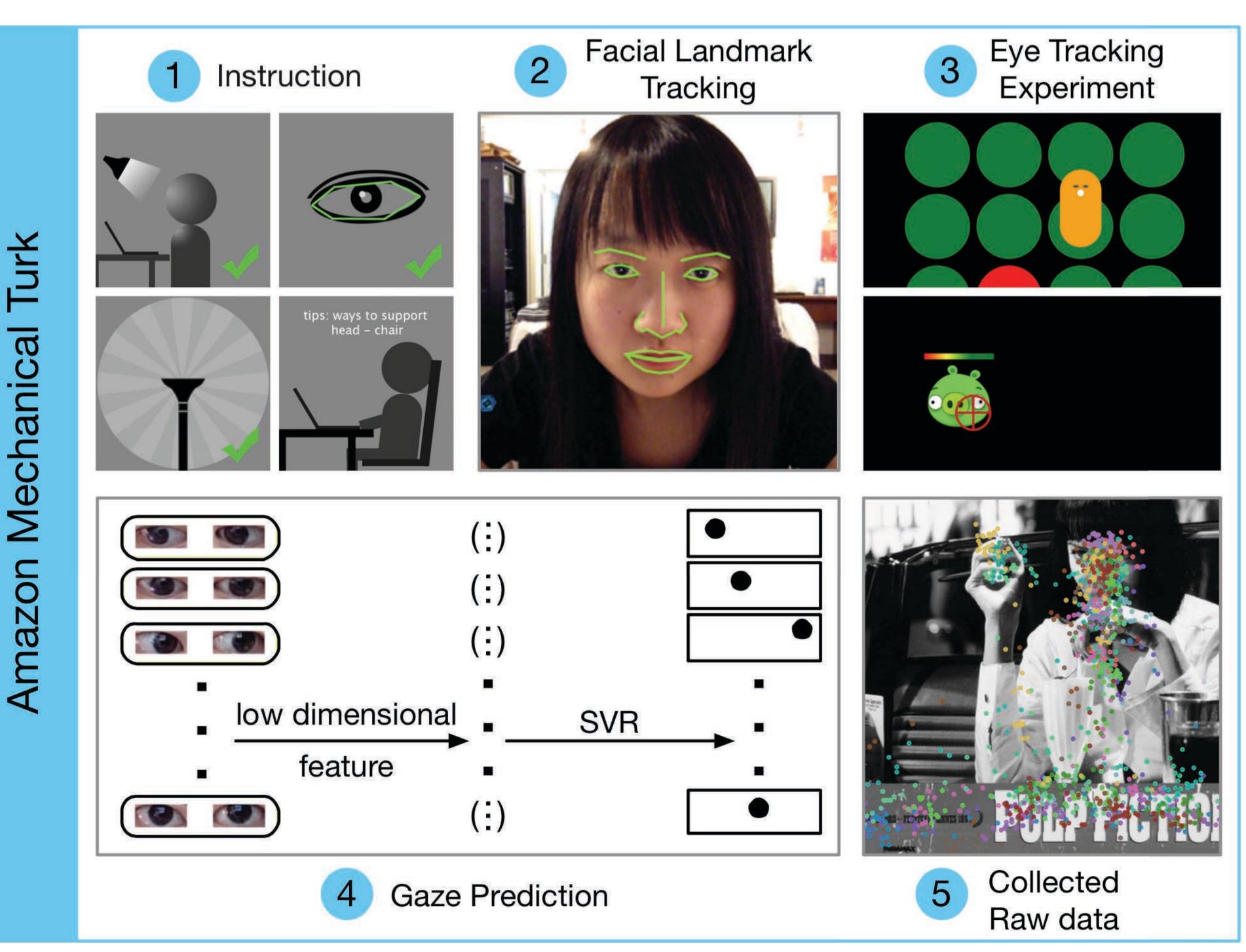
- 1. We propose a webcam-based gaze tracking system, which can collect large-scale data from Amazon Mechanical Turk
- 2. We apply a carefully designed gaming protocol to ensure the quality of the collected data.

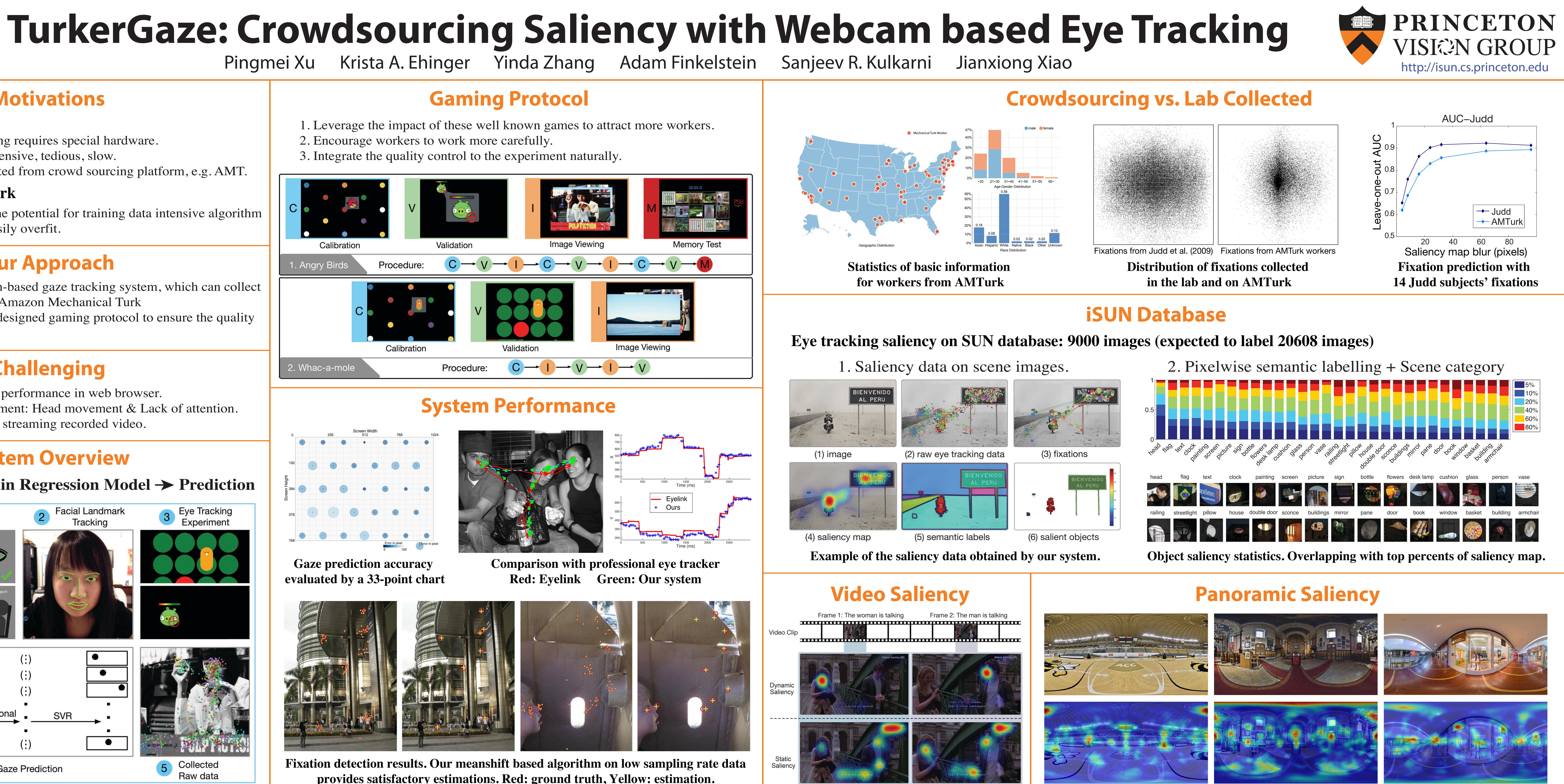
# Challenging

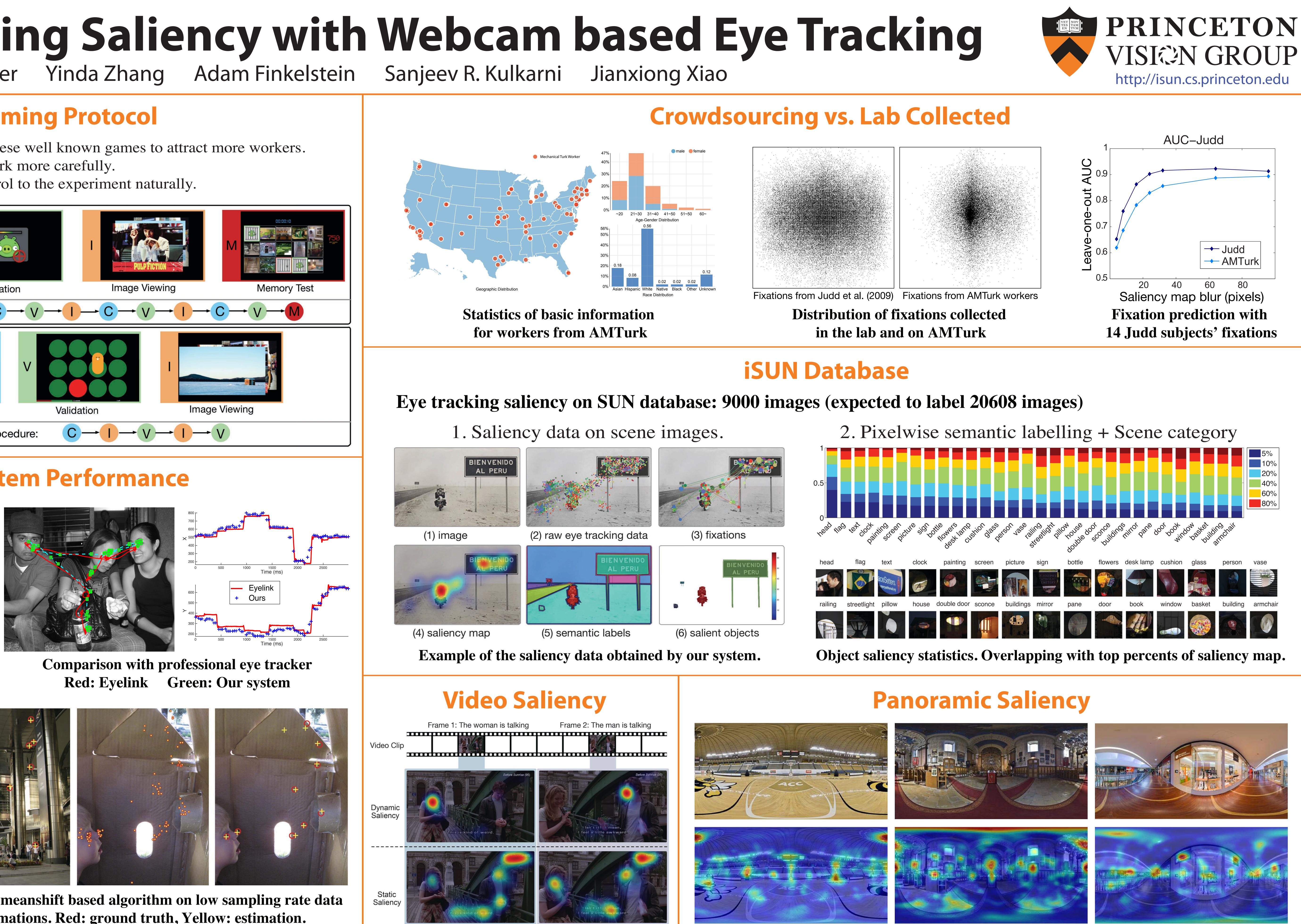
- 1. Efficiency: Real-time performance in web browser.
- 2. Uncontrolled environment: Head movement & Lack of attention.
- 3. Privacy issue: Cannot streaming recorded video.

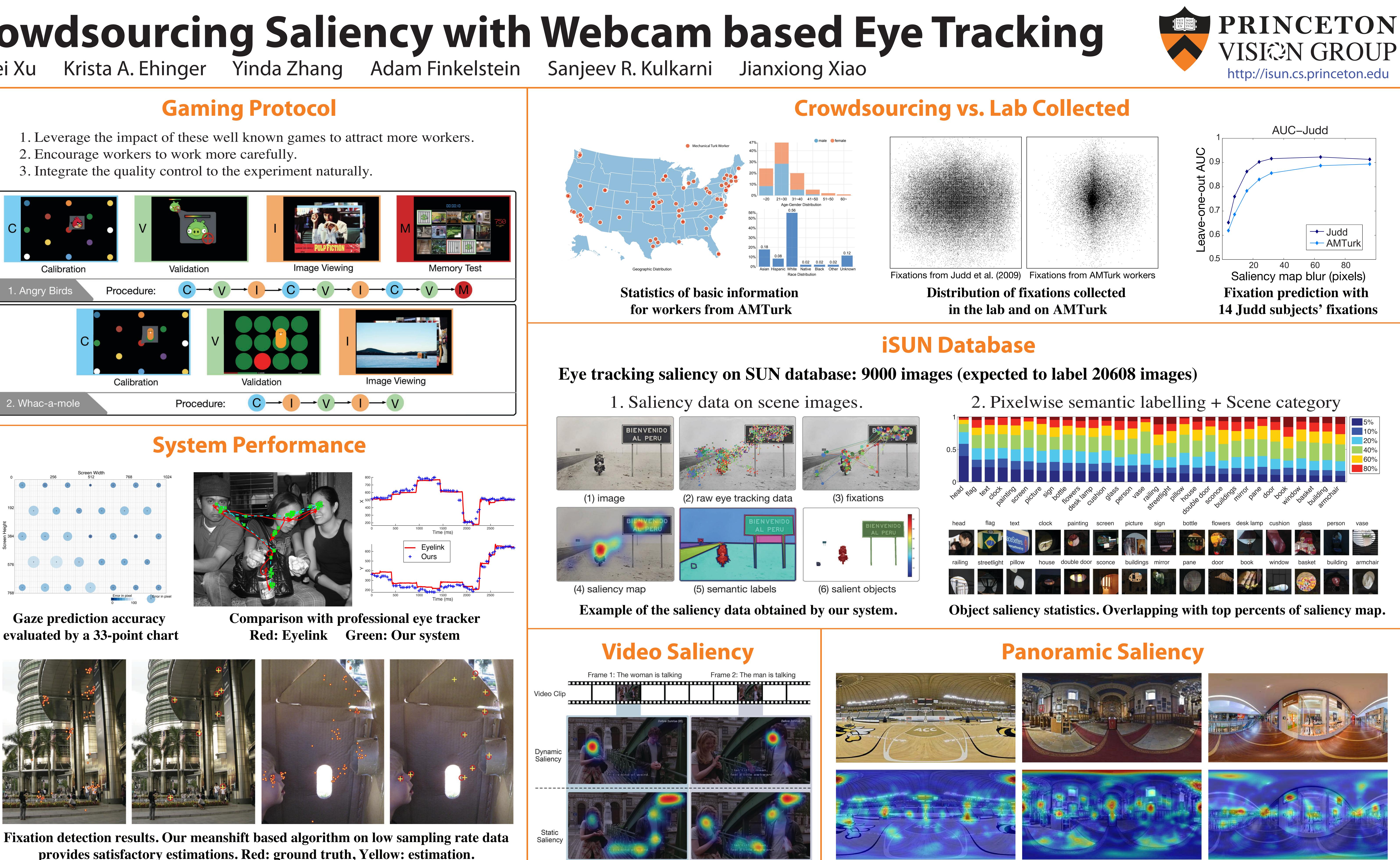
# **System Overview**

### **Calibration** -> Train Regression Model -> Prediction









provides satisfactory estimations. Red: ground truth, Yellow: estimation.

