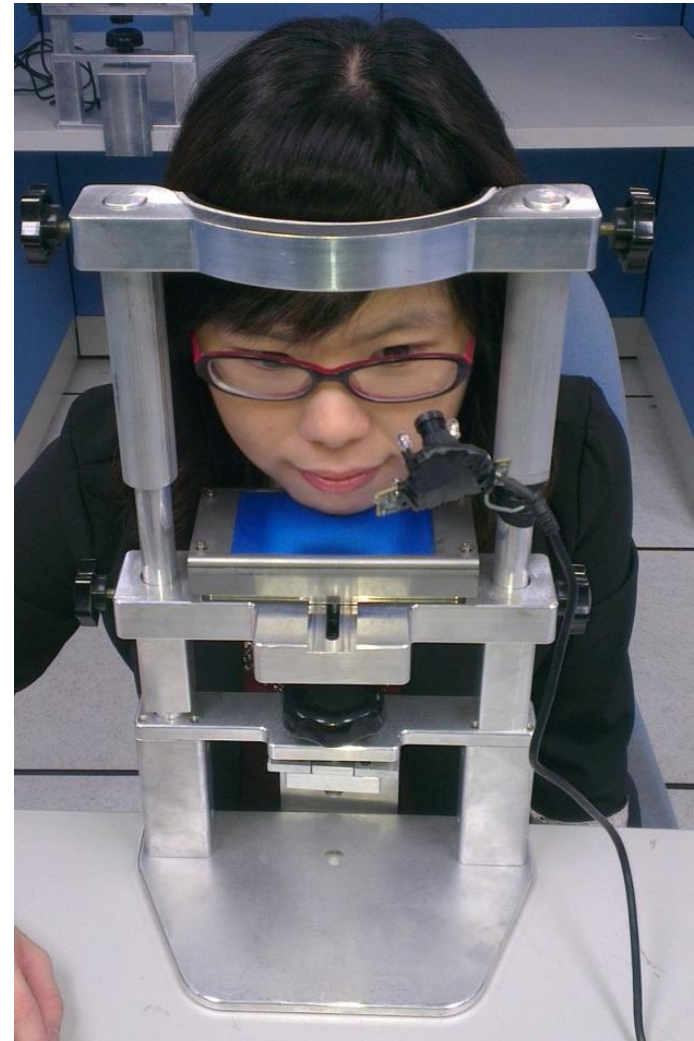


# **Eyes Can Talk— See The Truth from Eyes**

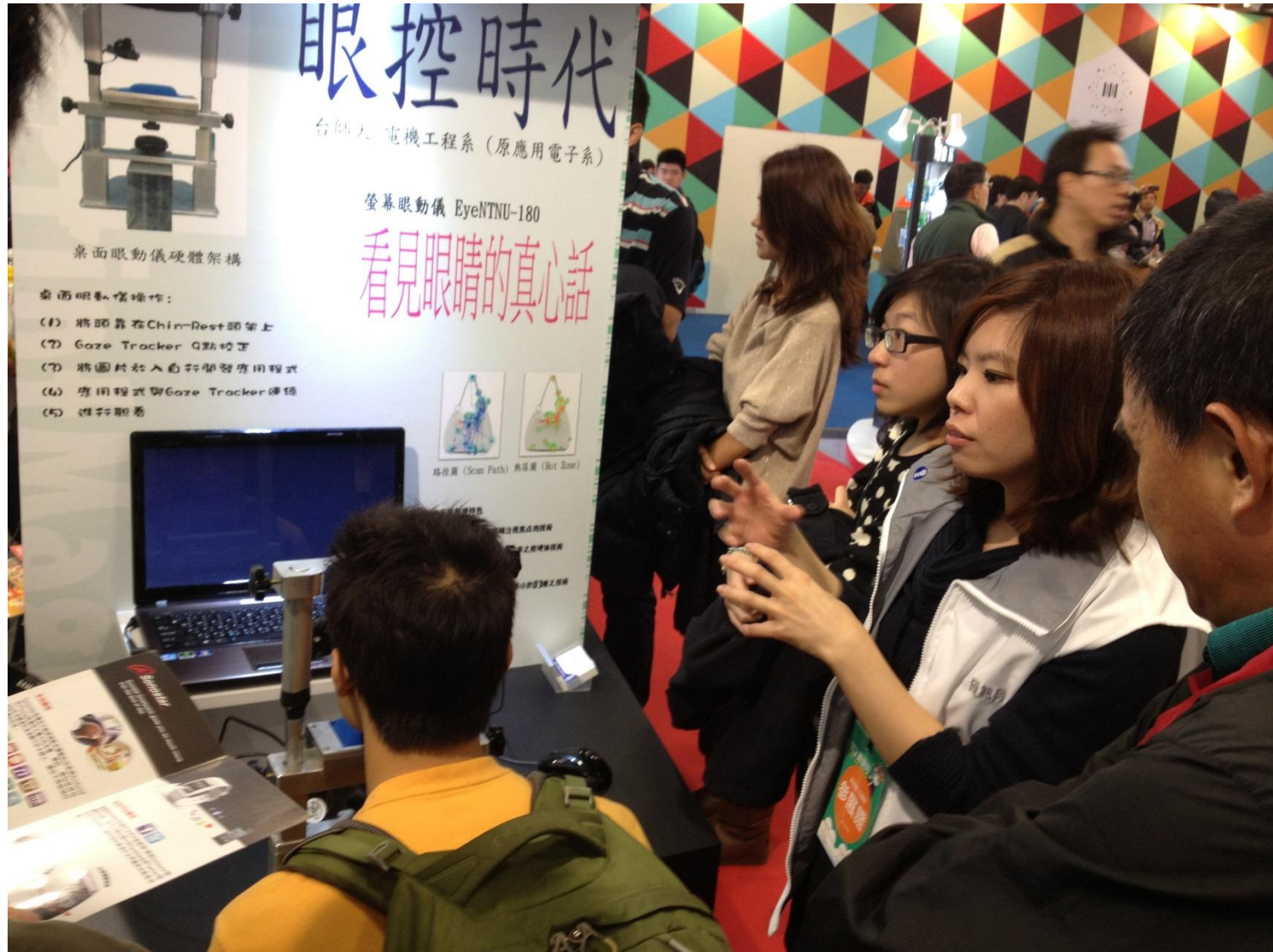
## **EyeNTNU-120 Eye- tracking System Demonstration**

NTNU The Aim for Top University Project

Department of Electrical Engineering  
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2015/03/23

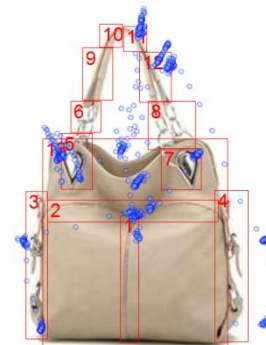
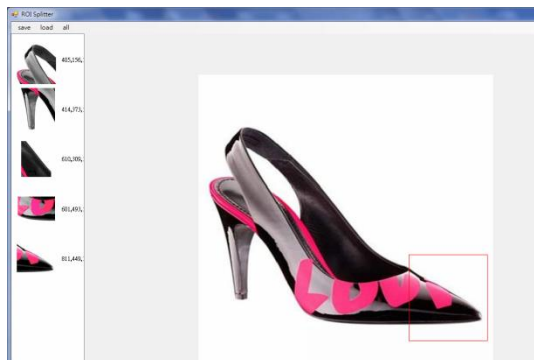


# Eye-tracking Exhibition



# Apparatus

- Hardware
  - EyeNTNU-120 eye-tracking system
  - Sampling rate = 120 Hz
  - Angle error <  $0.3^\circ$
- Software (Analyzing Tools)
  - ROI Tool: define ROIs of pictures
  - Fixation Calculator: process the eye movement data



# Experiment Procedure

1. Position your head on Chin-rest
2. Look at the dot point on the screen
3. Follow the dot point movement for nine-points calibration (gaze tracker)
4. Display stimulus materials from self-developed software program
5. Connect Gaze tracker with software application
6. Eye tracking experiment start by looking at displays on screen

# Stimulus Material

- Four hundred collected pictures of women's handbags from webpage without background or patterns
- Carefully selected 74 pictures with good quality
- The pictures were placed in the same orientation and image sizes of the pictures were very similar
- Pictures were randomly displayed on the center of computer screen
- The distance from the participants' eyes to the screen was 60 cm
- Six types of ROIs were assigned for each picture

# Eye Tracking: Recording and Quantification

- Five EyeNTNU-120s were used to record five participants' eye movement data concurrently
- Nine-point calibration before the experiment
- The data was collected every 5.56ms as participants gazing at the working area on the screen
- No data would be recorded when the participants blinked



# Eye Tracking: Recording and Quantification

- ROI Tool:
  - To define ROIs of every picture
- Fixation Calculator:
  - To calculate the following parameters on each ROI
    - TCT (total contact time of all fixations)
    - NOF (number of fixations 80ms)
    - LFF (latency of first fixation)
    - DFF (duration of first fixation)
  - Considered ROI as a factor
  - Used descriptive statistics for data analysis