

# User-Defined Game Control with Smart Glasses in Public Space

**1st Author Name**  
Affiliation  
Address  
e-mail address  
Optional phone number

**4rd Author Name**  
Affiliation  
Address  
e-mail address  
Optional phone number

**2nd Author Name**  
Affiliation  
Address  
e-mail address  
Optional phone number

**5rd Author Name**  
Affiliation  
Address  
e-mail address  
Optional phone number

**3rd Author Name**  
Affiliation  
Address  
e-mail address  
Optional phone number

**6rd Author Name**  
Affiliation  
Address  
e-mail address  
Optional phone number

## ABSTRACT

Without specific game controller and direct-touch, game control on Smart Glasses differs with existing console and mobile games. Although current game control set on Smart Glasses is explored by developers based on system limitation, the set is not reflective of user behavior. To create better game control, we presented an user-defined game control study in public space to collect user behavior. In all, 2448 game controls from 24 participants were logged, analyzed, and paired with think-aloud data for 17 commands performed with 3 interaction methods (On-Body, In-Air and Phone) and 2 glasses forms (Google Glass and Epson BT-100). Our findings indicate that users choose area relatively unobtrusive to perform the game control, and glasses form does influence how users creates game control. We also present a complete user-defined game control set with agreement scores and taxonomy. Our results will help designers create better game control sets informed by user behavior.

## Author Keywords

Guides; instructions; author's kit; conference publications; keywords should be separated by a semi-colon.

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## INTRODUCTION

### RELATED WORK

**Game Control**

**Glass Input**

**Gaming in Public Space**

**User-Defined Gesture**

### DEVELOPING A USER-DEFINED GAME CONTROL SET

**Overview and Rationale**

**Game Task Set**

**Participants**

**Glass Forms**

**Interaction Methods**

**Procedure**

### RESULTS

Our results include game control taxonomy, the user-defined gesture set, user rating, subjective responses, and qualitative observations for each interaction methods().

**Preference Between Interaction Methods**

**Behavior with Different Glasses Forms**

**Classification of Game Controls**

**User-Defined Game Control Sets**

*Agreement*

*Conflict and Coverage*

*Properties of the User-defined Gesture Sets*

*Taxonomic Breakdown of User-defined Game Controls*

**Mental Model Observations**

*Social Acceptance and Control Area*

*Metaphor from Existing Game Control*

### DISCUSSION

*Users' and Designers' Gestures*

*Implications for In-Air Gesture Technology*

*Implications for On-Body Input Technology*

*Implications for User Interfaces*

*Limitation and Next Steps*

### CONCLUSION

### ACKNOWLEDGMENTS

### REFERENCES