



## 2nd International Workshop on Pervasive Eye Tracking and Mobile Eye-Based Interaction - PETMEI 2012

**Andreas Bulling**

University of Cambridge / Lancaster University, UK

**Geert Brône**

Lessius University College Antwerp / University of Leuven, Belgium

**Shiwei Cheng**

Zhejiang University of Technology, China

**Päivi Majaranta**

University of Tampere, Finland

# We are running a mini conference...

... but please still

1) **ask questions** during and after each presentation

2) **discuss lively** during the breaks

3) **write down any implications, challenges or applications** that come to your mind

in order to foster interaction, boost novel ideas and  
**prepare for the plenary discussion.**

Thanks! ;-)

# Thanks to our PC members

**Florian Alt**, University of Stuttgart, Germany  
**Roman Bednarik**, University of Eastern Finland, Finland  
**Nikolaus Bee**, BMW Group Research and Technology, Germany  
**Ralf Biedert**, German Research Center for AI, Germany  
**Andrew Duchowski**, Clemson University, USA  
**Hans Gellersen**, Lancaster University, United Kingdom  
**Dan Witzner Hansen**, IT University of Copenhagen, Denmark  
**Yoshio Ishiguro**, University of Tokyo, Japan  
**Howell Istance**, De Montfort University, United Kingdom  
**Walterio Mayol**, University of Bristol, United Kingdom  
**Bilge Mutlu**, University of Wisconsin-Madison, USA  
**Yukiko Nakano**, Seikei University, Japan  
**Thies Pfeiffer**, Bielefeld University, Germany  
**Pernilla Qvarfordt**, FX Palo Alto Laboratory, USA  
**Sophie Stellmach**, University of Magdeburg, Germany  
**Jayson Turner**, Lancaster University, United Kingdom  
**Mélodie Vidal**, Lancaster University, United Kingdom

# Thanks to our sponsors

## Champion



## Contributors



## Friends



## Institutional



# Program

09:00 – 10:00	<b>Mary M. Hayhoe</b> (Keynote) <i>Understanding gaze control in the context of behavior</i>	← Coffee break
10:30 – 10:50	<b>Stijn De Beugher, Younes Ichiche, Geert Brône and Toon Goedemé</b> <i>Automatic analysis of eye-tracking data using object detection algorithms</i>	
10:50 – 11:20	<b>Christian Lange, Ergoneers GmbH</b> <i>Smarttrack: Marker-free gaze estimation</i>	
11:20 – 11:50	<b>Zhefan Ye, Yin Li, Alireza Fathi, Yi Han, Agata Rozga, Gregory Abowd and James Rehg</b> <i>Detecting Eye Contact using Wearable Eye-Tracking Glasses</i>	← Lunch break
13:30 – 14:00	<b>Thomas Kinsman and Jeff Pelz</b> <i>Location by Parts – Model Generation and Feature Fusion for Mobile Eye Pupil Tracking Under Challenging Lighting</i>	
14:00 – 14:20	<b>Victoria Ponz, Arantxa Villanueva and Rafael Cabeza</b> <i>Dataset for the evaluation of eye detector for gaze estimation</i>	
14:20 – 14:40	<b>Jose Javier Bengoechea, Arantxa Villanueva and Rafael Cabeza</b> <i>Hybrid Eye Detection Algorithm for Outdoor Environments</i>	← Coffee break
15:10 – 15:30	<b>Vytautas Vaitukaitis and Andreas Bulling</b> <i>Eye Gesture Recognition on Portable Devices</i>	
15:30 – 16:00	<b>Oleg Spakov and Päivi Majaranta</b> <i>Enhanced Gaze Interaction Using Simple Head Gestures</i>	
16:00 – 17:00	<b>Plenary discussion</b> <i>Focus topic: Mobile Gaze-Based Interaction Challenge (MobiGaze)</i>	

new

... is not provided by the conference this year! :-)

**BUT**

we have reserved tables in the

**Penn City Grill**

located on the 2nd floor of the Westin Convention Center

**Address:**

1000 Penn Avenue, Westin Convention Center  
Pittsburgh, PA 15222

# Joint workshop dinner

September 9, 2012

## The Sonoma Grille

<http://thesonomagrille.com/>

### Time:

7:00 pm (2 minute walk)

### Address:

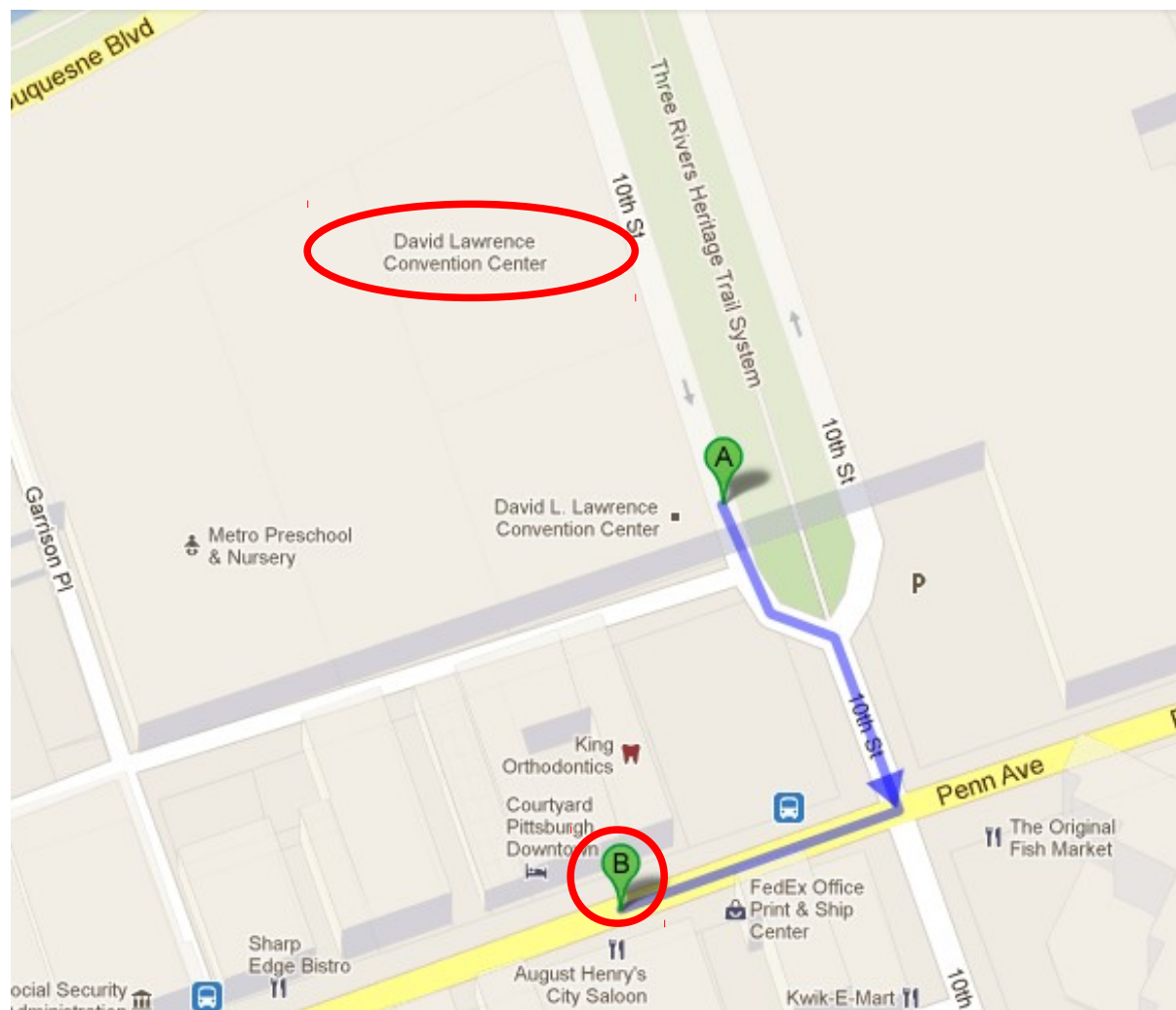
947 Penn Avenue  
Pittsburgh, PA 15222

### Phone (Restaurant):

412-697-1336

### Phone (Andreas):

0044 75 266 82797





# And the best paper award goes to...



1st place



Oleg Spakov



Päivi Majaranta

**Enhanced Gaze Interaction  
Using Simple Head Gestures**



# A vision for eye tracking and eye-based HCI

## Eye tracking...

- Long history in experimental psychology and HCI
- Mostly focused on constrained stationary/indoor settings

**... will become pervasively usable in daily life** [1]

- On-body: Glasses, contact lenses, head-mounted displays
- Portable devices: phones, tablets, laptops
- Ambient: ATMs, shopping malls, work place

→ **Pervasive eye tracking**



[1] Bulling et al., IEEE Pervasive Computing 9(4), 2010

# Pervasive eye tracking

## Continuous eye monitoring and analysis 24/7

→ mobile eye-based human-computer interfaces that will become pervasively usable in everyday life

Implications



Research Challenges



Applications

Interfaces

**Mary M. Hayhoe, Ph.D.**  
Professor of Psychology  
Center for Perceptual Systems  
The University of Texas at Austin

Undergraduate degree  
University of Queensland, Australia

PhD in Psychology  
University of California at San Diego.

Center for Visual Science at the University of Rochester  
Associate Director, 1992 to 2001  
Director of the Cognitive Science Program, 1998 to 2000

