

# **Wearable Computers: Future Fix All or Fashion Faux Pas?**

Heather Ruland Staines  
Vice President Publisher Development  
London, December 4, 2013

# The Wearable Computer

“The wearable computer was meant by its early builders to be a **different kind of computer**, not just a computer in a different place.

A computer interrupts you, but a wearable **watches your mood**,

a computer needs your active attention, but a wearable is the **one that's paying attention**,

a computer needs direct input, but a wearable **takes care of its own perceptions.**”

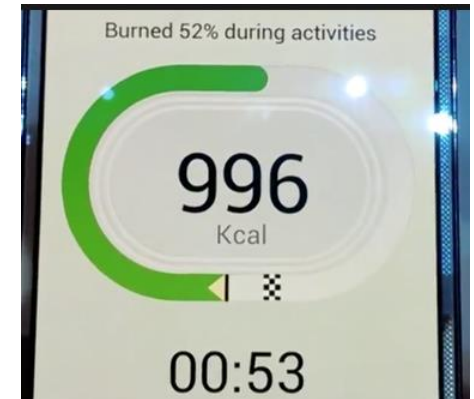
Paul Miller, “Project Glass and the epic history of wearable computers, *The Verge*, June 26, 2012

# Wearable Computers



# Uses for Wearable Computers

- Education/Enrichment/Gaming/Entertainment
- Content Creation/Research
- Life-logging/Memory Assistance
- Health/Sensory Data
- Social/Communication

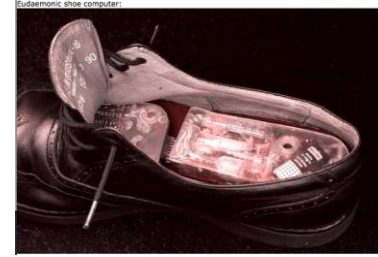


# Uses for Wearable Computers

- Safety/Security/Policing/Military
- Accessibility/Assistive Devices
- Navigation/Enhancement
- Marketing/Purchasing/Geo-fencing
- Augmented/Annotated/Diminished Reality



# History of Wearable Computers



- 1960s-Edward O. Thorp and Claude Shannon
- 1981-Steve Mann (University of Toronto)
- 1990s-MIT and Columbia University Projects



Steve Mann's "wearable computer" and "reality mediator" inventions of the 1970s have evolved into what looks like ordinary eyeglasses.



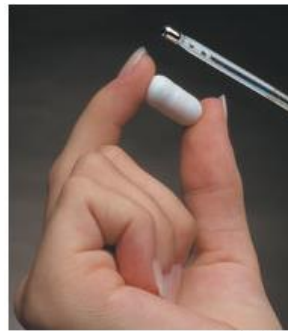
Photo by Steve Mann, GNU Free Documentation License

MIT photo courtesy of Software Agents Group, MIT Media Lab, taken by Sam Ogden.

KARMA (Knowledge-based Augmented Reality for Maintenance Assistance, [monet.cs.columbia.edu/projects/karma/karma.html](http://monet.cs.columbia.edu/projects/karma/karma.html))

# History of Wearable Computers

- 2000s-Refinements in processors, memory, battery size and capacity, display sharpness and thickness, connectivity
- Today-Smart watches, fitness bands, Google Glass
- Tomorrow-Contact lenses, in-body devices, internet of things



HQ, Inc.



Contact lens photo: Biomedicine News, June 7, 2013

CorTemp pill, HQ, Inc.

Internet of Things, VentureBeat, Jan. 31, 2013

# Google Glass

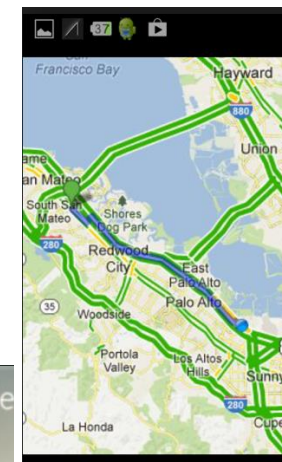
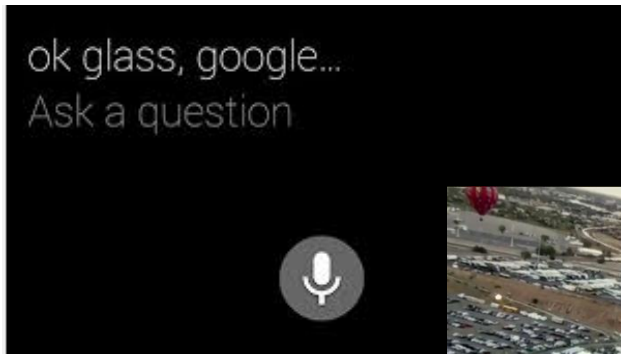
- Explorer Contest, February 2013
- Picked Up Glass, June
  - 5 megapixel camera, 15GB
  - Monthly Updates
  - New Features
  - GPS
  - Search
- GDK (Glass Developers Kit), November 2013
- Glass 2 Announced
- Commercial Release 2014?



ok glass, google...  
take a picture  
record a video  
get directions to...  
send a message to...

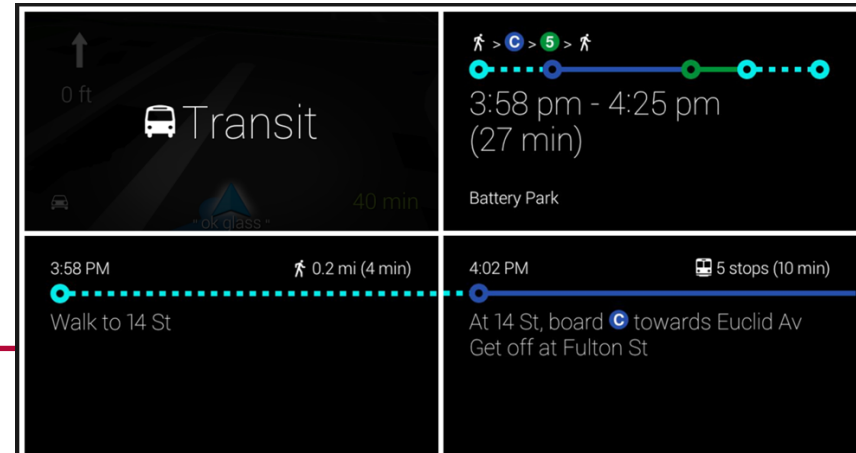
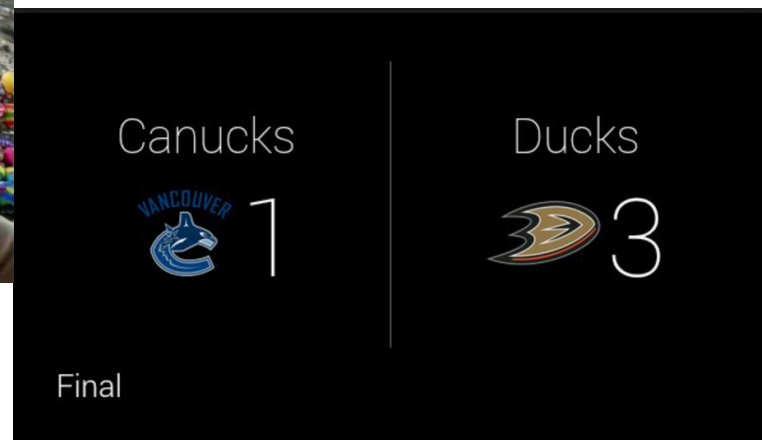
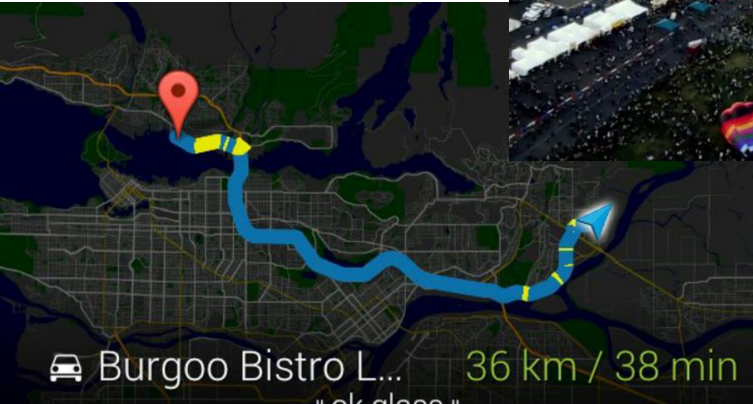


# Screenshots



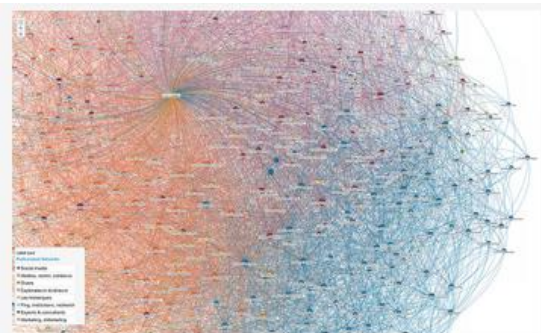
25 min to Work  
Medium traffic  
on US-101 N

🚗 5 min delay



# Uses in Teaching and Learning

- Medical
  - Consultation
  - Information
  - Instruction
- Engineering/Architecture
- Journalism
- Field Work



Example of data visualization (Source: <http://www.flickr.com/photos/luc/5418037955/>)

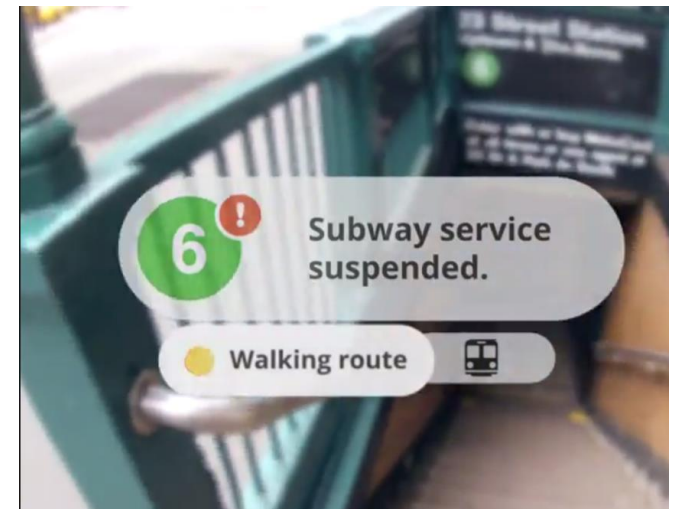
# Uses in Teaching and Learning

- Agriculture
- Zoology
- Psychology
- Behavioral Science



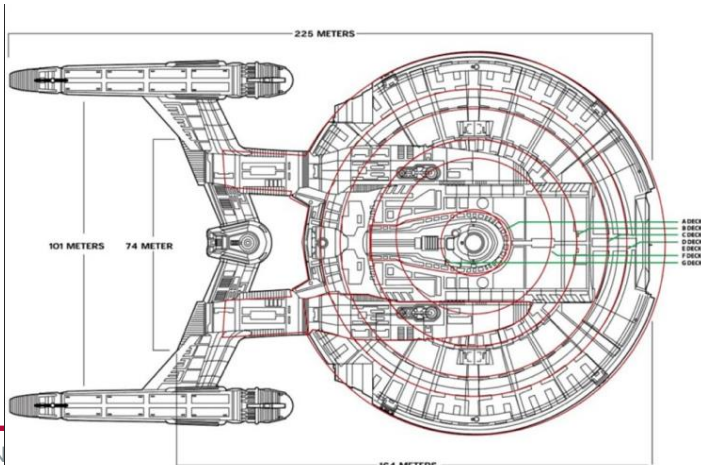
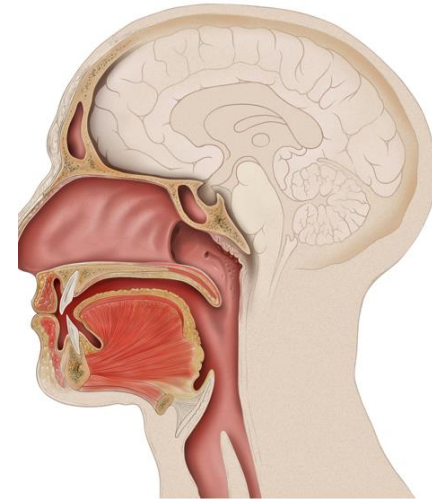
# Accessibility

- Text to Speech
- Audio Navigation
- Object Recognition--VizWiz (Amazon Mechanical Turk)
- Emotion Detection



# Implications for Publishers

- Content Creation/Content Consumption
- Location aware content (Arcadia)
- Schematics/Technical Documentation
- Anatomical Info, Case Studies
- Protocols
- Supplemental Data

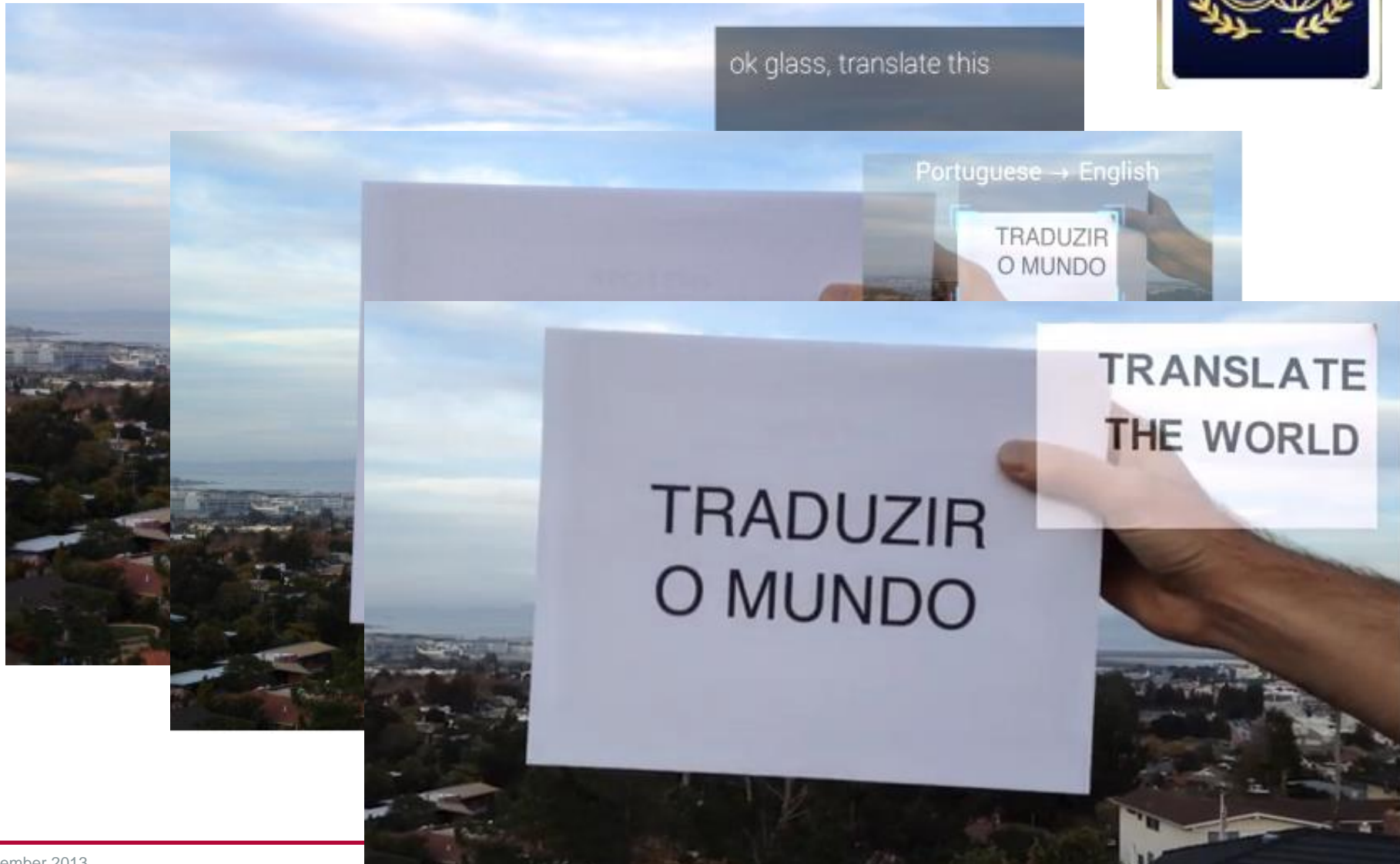


# Concerns

- Privacy
- Data Collection
- Social Implications/Norms
- Neurological Impact
- Copyright



# Word Lens



# Field Trip



Castello di Amorosa  
It may look like an old European Castle, but this winery was



Bale Grist Mill (1846)

JUST NOW



# Blue



# Promise?

- Immediacy
  - Intention → Action
- QR Codes
- Live-streaming
- Vision Enhancement/Motion Detection
- “Here Comes the world of Ambient Everything”
  - Mike Elgan, *Computerworld*, Nov. 16, 2013



QR code for the [URL](http://en.m.wikipedia.org) of the English  
Wikipedia Mobile main page,  
"<http://en.m.wikipedia.org>"

# Any Questions?

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