Wearable Computers: Future Fix All or Fashion Faux Pas?

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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

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
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

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?
Screenshots

ok glass, google...
Ask a question.

How's the view up there?

Canucks 1
Ducks 3
Final

Burgoo Bistro L...
36 km / 38 min

Richland
68°
81°
55°

Transit
3:58 pm - 4:25 pm
(27 min)

Battery Park
0.2 mi (4 min)

Walk to 14 St

At 14 St, board towards Euclid Av
Get off at Fulton St
Uses in Teaching and Learning

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

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

Bale Grist Mill (1846)
Blue

Pitching
Chris Tillman #30 RHP
P: 35 S: 18 W-L: 15-5 3.71 ERA

Batting
Pablo Sandoval #48 3B
AVG: .278 OBP: .332 HR: 13 RBI: 72
Promise?

• Immediacy
  – Intention $\rightarrow$ Action
• QR Codes
• Live-streaming
• Vision Enhancement/Motion Detection
• “Here Comes the world of Ambient Everything”
  – Mike Elgan, *Computerworld*, Nov. 16, 2013
Any Questions?

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