

Wearable Computing : Bristol Fashion

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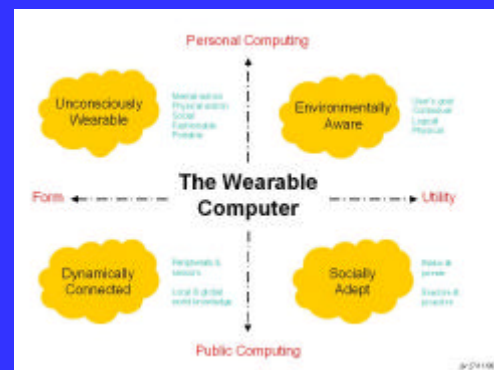
Wearable Computing : Bristol Fashion

- ◆ Bristol Wearable Computing Initiative
- ◆ CyberJacket & BlazerJet
- ◆ Software Architectures
- ◆ Wearable Applications
- ◆ Current Work

Bristol Wearable Computing Initiative

- formed 1997
- collaboration between Hewlett-Packard Labs and the University of Bristol
- main interest - "Situated Computing"

Bristol Wearable Computing Initiative



CyberJacket

- CardPC - 25MHz 486
- PC104/PCMCIA/Serial/Parallel Ports
- 80 - 240MB
- Linux + LocoMedia
- 'FootBridge'
- Nino display
- Speech Interface
- dGPS
- GSM 'phone
- NiMH Batteries



CyberJacket

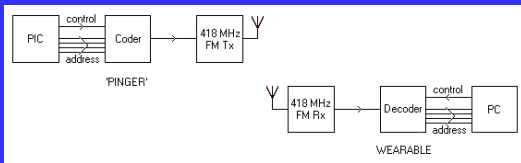
- it worked! BUT
- what's happening ?
- GPS inaccurate;
- difficult to debug;
- heavy power consumption.

Visualization and Virtual Environments Community Club (VVECC)

Augmenting the Real World:

Augmented Reality and Wearable Computing

'Pingers'



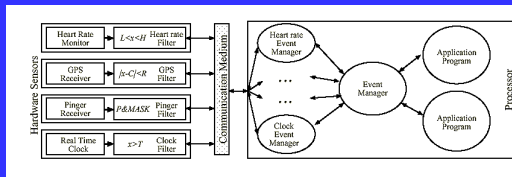
- 'Pinger' codes and transmits address once every five seconds;
- Range adjustable 1m to 100m;
- Wearable Computer is pointed to address.

BlazerJet

- CardPC - 60MHz 486
- 32MB
- LEM + EventMan
- Jornada Display
- 'Pingers'
- dGPS/GSM
- Speech Interface
- LiIon Batteries
- (Bluetooth...)



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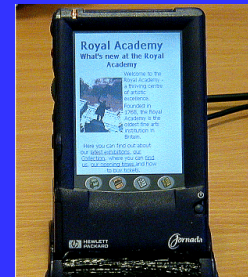


EventMan architecture -

- ♦ distributed processing
- ♦ low power consumption
- ♦ simplified debugging/maintenance

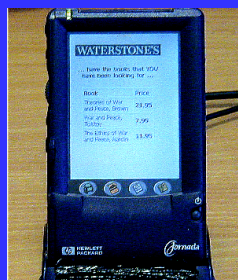
Tourist App

- web pages have lat/lon stored as metadata;
- pages are loaded onto a server in the CyberJacket;
- when current location matches web page data, web page is displayed.

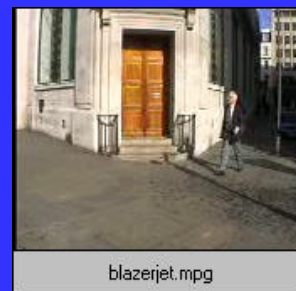


Shopping App

- Pinger indicates proximity to shop;
- Jacket sends shopping list to search shop's stock database;
- user is alerted IF there is a match.



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Bristol Wearable Computing Initiative

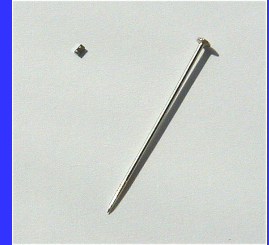
Current Work

- Sensor Networks - PIC/RS232 & iButtons
- onHandPC
- Context Sensing - Accelerometers

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Sensor Networks

- PIC/RS232
- iButtons



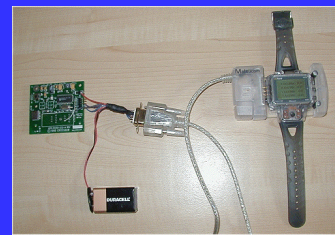
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onHandPC

- W-PS-DOS
- 3.6MHz
- 2MB flash RAM
- RS232 interface
- 'a 286 on your wrist'



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More Context Sensing - Accelerometers placed on the body can determine what the user is doing.

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Conclusion

- People are already carrying and/or wearing many intelligent devices - 'phones, PDAs, GPS Receivers;
- Devices such as these will proliferate and become part of daily wear bringing with them interesting possibilities for interaction;
- We have started to explore this future and have demonstrated that it is a rich environment for Computer Science and for potentially useful applications.

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