Course Overview

• Instructor
  – Christian Poellabauer
  – cpoellab@cse.nd.edu, 354 Fitzpatrick Hall
  – Office hours:
    • Mon 9-10, Wed 1-2
    • By appointment
• Teaching Assistant
  – Nikhil Yadav
  – nyadav@nd.edu, 214 Cushing Hall
  – Office hours:
    • Wed 12-1, Fri 10.40-11.30
    • DARTS Lab (356B Fitzpatrick Hall)

Course Overview

• MW(F) 10.40 – 11.30, deBartolo 202
• Friday lectures “on demand” (like this week)
  – Catching up
  – Tutorials
  – Student presentations
  – Independent lab meetings
• http://www.cse.nd.edu/~cpoellab/teaching/cse40827/
Course Overview

- Student requirements
  - Prepare for lectures (15%)
    - Paper summaries due before lecture (AFS)
    - Create directory “readings” and name summaries “summaryMMDD.xxx” (MM=month, DD=day, xxx=extensions (doc, pdf, ps, txt, ppt))
  - Survey paper on topic of your choice (15%)
  - “How to” tutorial on one technology (15%)
  - Projects (40%)
    - 3 mini-projects
    - Project proposal
    - Design, feasibility study
    - Implementation and evaluation
    - Presentation and documentation
  - Collaborative assessment (15%)
    - wiki

Reading Assignment

- "The Computer for the 21st Century", Mark Weiser
- "Synthetic Serendipity", Vernor Vinge
- "Mike Villas's World", Harry Goldstein

- Paper summary:
  - Summarize each paper in 1-2 paragraphs
  - Key ideas, problem discussed, solutions proposed, open issues, etc.
  - Answer questions (1-3 sentences each)
    - How does Weiser explain the term "embodied virtuality"?
    - Can you comment on some of his predictions (battery life time, screen size, removable hard disks and memory chips, wireless transfer rates, etc.)?
    - What does Weiser identify as the key social issue?

What is Ubiquitous Computing?

- “The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.”, Mark Weiser 1991

- [http://www.youtube.com/watch?v=iGnZ9ST95T0](http://www.youtube.com/watch?v=iGnZ9ST95T0)
Ubiquitous Computing

Wave 1: Mainframe Computers
- Computers run by experts “behind closed doors”
- Many users access computer via “dumb” terminals
- Computers large, “powerful”, and expensive

Wave 2: PC (Personal Computers)
- Users have their own computers
- Quite powerful, relatively inexpensive
- Laptops replace desktops (add mobility)
- Opened doors for new applications (word processing, productivity, video/audio, web applications)

Wave 3: Internet
- “Information age”; online services, cloud computing, new businesses, ...
- Combines elements of PC era and mainframe era
Ubiquitous Computing

- Wave IV: Ubiquitous Computing
  - Explosion in number/variety of devices
  - Humans become subjects (instead of users)
  - Anywhere, anytime, but “invisible”
  - Intention: make our lives “better”

- Minority Report Clip 1
- Minority Report Clip 2

- Requirement: network capability!
- “Internet of Things”