

Welcome to the Embedded Systems World

Mongkol Ekpanyapong, Ph.D.
Asian Institute of Technology (AIT)
mongkol@ait.ac.th



Embedded Systems

- Small computer
- Resource limited
 - Small memory
 - Small HDD
- High performance
- Low power

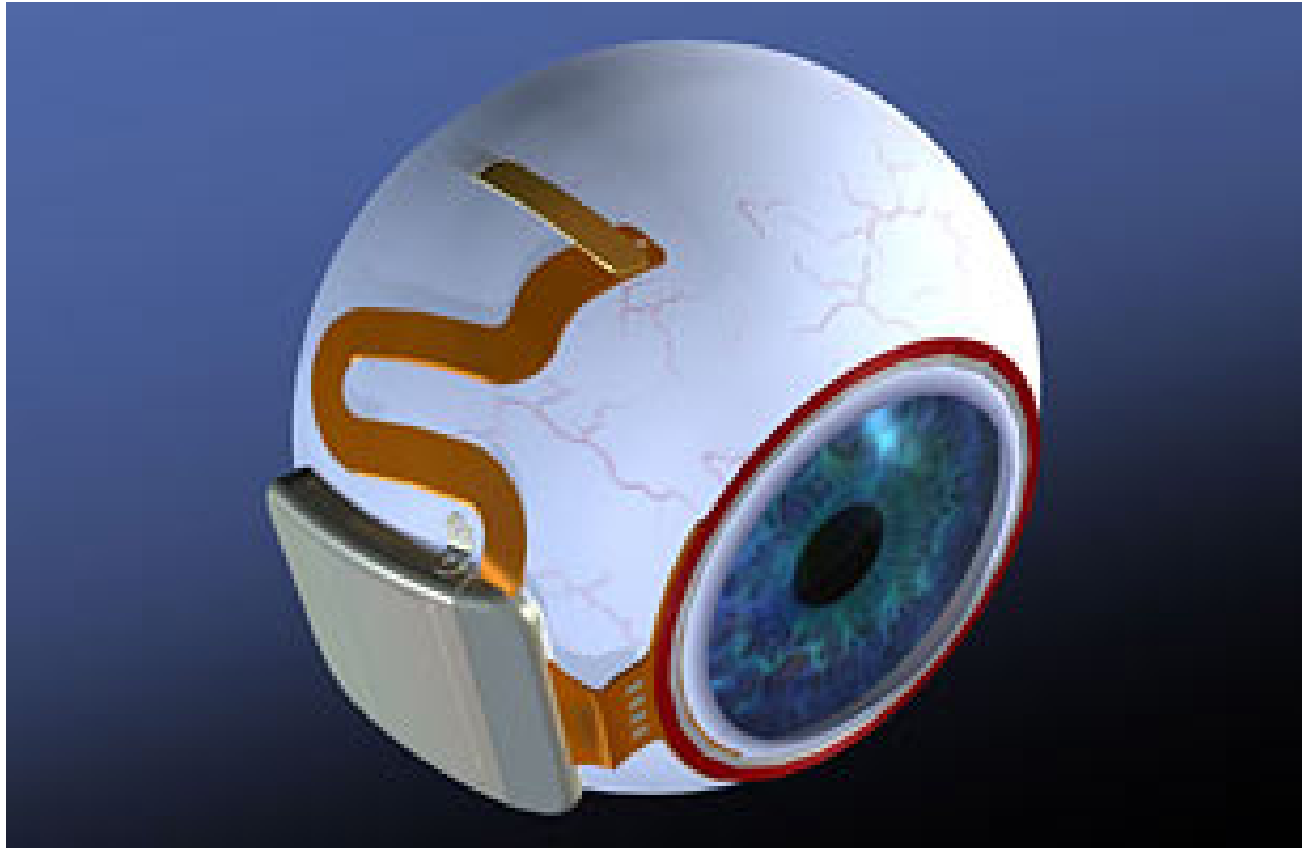


Example of Embedded Systems

Tweeting by thinking



Electric eye



Personnel Carbon Footprint



Hand-held Ultrasonic



Cyborg beetle



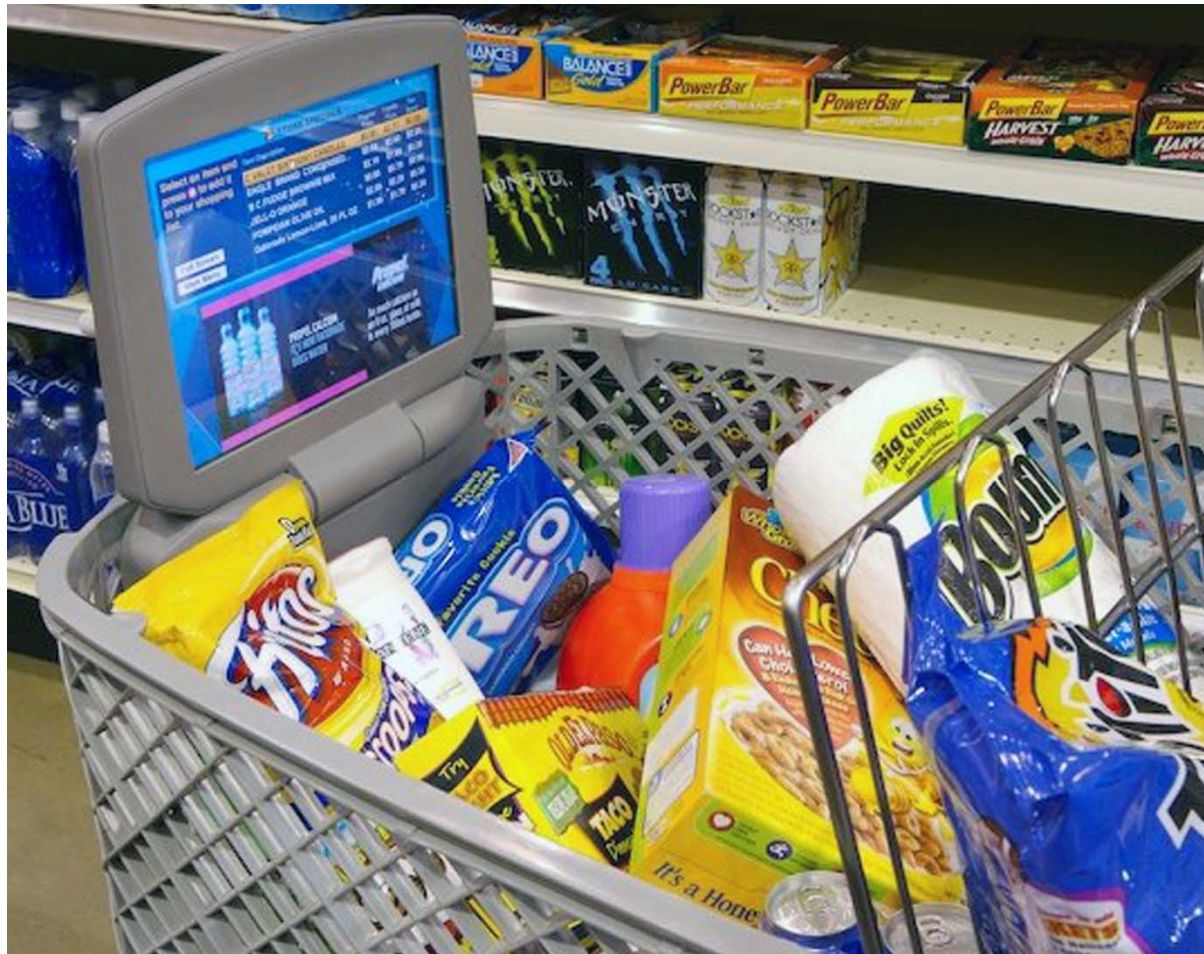
Controller-Free Gaming



Smart Sewing Machine



Smart cart



TMIO Connect Oven



AIT Automated Flying Robot's project



AIT Intelligent Vehicle



AIT Intelligent Bicycle



AIT Brain Stimulus Mice



Iphone



Inside iPhone

The diagram shows an exploded view of an iPhone with the following components and their costs:

- SIM card**
- SIM card bracket**
- Plastic casing**
- Black antenna plate**
- Speaker, touch sensor and display cables**
- Balda AG touch screen module – \$27 plus Epson touch screen display – \$24.50**
- Logic board**
 - Infinion digital baseband radio transceiver – \$15.25
 - National Semiconductor display & graphics connecting chip – \$1.50
 - CSR Bluetooth chip – \$1.90
 - Marvell Technology Group Wi-Fi chip – \$6
 - Intel Wireless chip
 - Skyworks GSM Edge Power amp
- 3.7 volt Li-Lon Polymer phone battery**
- Phone back**
- Samsung Electronics Nand Flash memory and Dram chip – \$76.25**
- Woolfsn Microelectronics Audio codec**
- Battery charger software**

COST OF COMPONENTS: \$266 (£130)
RETAIL COST OF PHONE: \$600 (£300)

Why Embedded Systems?

- Unleash your imagination
- Extend your capabilities, the trend for multi-disciplinary is coming
- You can do it too

Scholarships in Embedded Systems program

- Full and partial scholarships are available for GPA 2.75 or higher
- Master and Ph.D. programs
- Admission: apply at www.services.ait.ac.th/admissions
select August 2010
select field of study
 Microelectronics and Embedded Systems
select require funding
- There will be a new curriculum

Any question, you can contact me at mongkol@ait.ac.th
- Deadline: Before 31 March or out of funding