

Graduation Thesis Topics for AY2012

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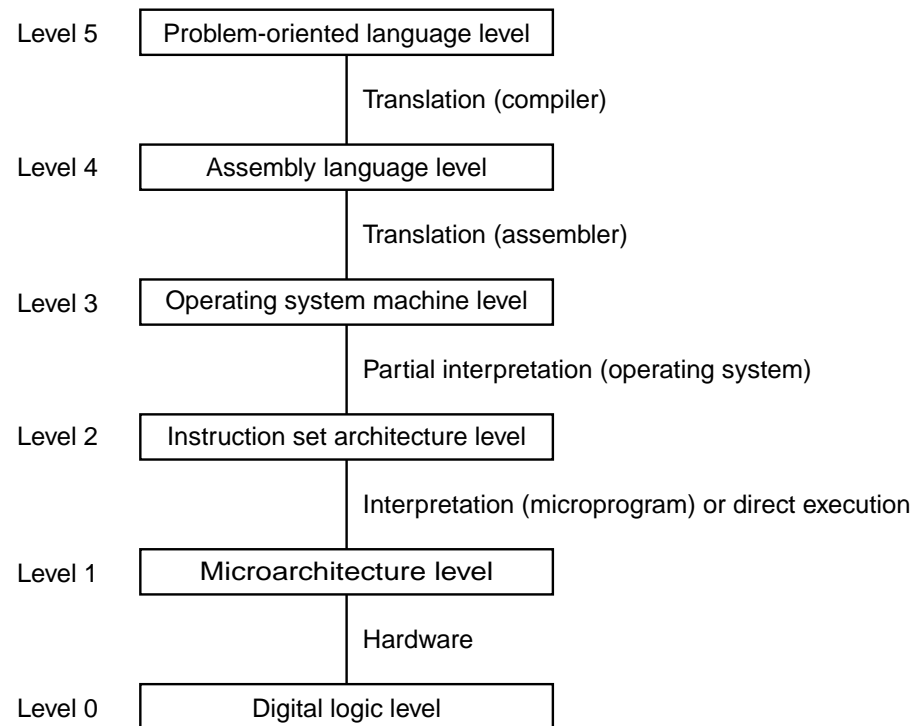
The University of Aizu

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Computer Architecture
& Operating Systems Group

Hierarchical Structure of Computer Systems



From “Structured Computer Organization” by Andrew Tanenbaum.
Our group members are mostly working on between Levels 2 and 3.

Workload Analysis & Performance Evaluation (1)

- CPUs are getting faster and more cores on a chip. For example, Pentium (from Intel) released in 1993 with 60MHz clock frequency. Off course, a single core. Core i7 has $> 3GHz$ clock ($> \times 50$) and has up to 6 cores.
- Then, how about your applications ? Did they also get faster as CPUs ? In most cases, the answer is NO. **WHY ?**
 1. CPU is only a part of computer systems: many others factors (HDDs, main memory, network, etc) affect the performance.
 2. HW/SW interface: what is *good* HW for SW ? how SW use HW to exploit its maximum performance ?

We are working on this point.

Save Paper, Save Printer Toner and Save Energy

- Some school claims itself as “Advancing the Technology for Humanity”. Fine, perfectly fine.
- However, we have so many procedures around us for which we have to use paper forms and need to fill with your hand.
- These legacy customs not only waste resources (such as paper, energy) but also waste human power and are error-prone.
- We try to implement systems by which such old-waste-of-time procedures with publicly available system, software, or services (such as Google Apps).

We need students who ...

- are interested in the topics explained earlier.
- come to the lab and spend substantial time of your day in the lab (you do this because you are interested, not because you are forced).
- come to the meeting and other activities of the lab. Please note that if you miss the group meeting too many times without notice and justifiable reasons, you will be dismissed from the lab.

See the Outside World

- Collaboration with other schools:
 - UCD (Ireland), UPT (Romania), NTU (Singapore), Universidade do Porto (Portugal)
- Exchange program by Univ of Aizu
 - Rose-Hullman (USA), NTU (Singapore) and Universidade do Porto (Portugal)
- Recent Presentations at Conference and Workshop
 - IPSJ/SIGEVA34 (IWATE), HPCC-2011 (Canada), ICIM μ (Malaysia)

Reference

- Group's web site: `www.oslab.biz`
(past theses are available at Public Area link).
- Open Campus lab information (in Japanese)
`opencampus.oslab.biz`
- Twitter: `oslab`
- Youtube: `CAOSgroup`
- USTREAM: `ustream.oslab.biz`
- If you have any questions, please contact Dr. Hitoshi Oi at `hitoshi@u-aizu.ac.jp` or talk to my student in the lab (241-E).