Department’s Information

Department of Computer Engineering, Faculty of Engineering, PSU, Thailand

14 July 2008
About Computer Engineering Dept.

- One of 7 departments in the Faculty of Engineering,
  - Considered as the biggest department
  - Recruit the most number of undergraduate students

- Provide academic service in two campuses
  - HatYai (Main campus)
  - Phuket
About Computer Engineering Dept. (cont.)

- **HatYai Campus**
  - Good environment (Hill side & Reservoir nearby)
  - ~50 Km to Malaysia Border

- **Phuket Campus**
  - Good environment (Sea & beaches nearby)
  - ~10 Km to Patong Beach, a world-famous Beach
Study Programs

- B.Eng. Program in Computer Engineering
  - Computer Networks
  - Information Engineering
  - Computer System and VLSI Design
  - Robotics and Control Systems
- M.Eng. Program in Computer Engineering
- Ph.D. in Computer Engineering
Student Recruitment Plan

- **Bachelor Degree Program** *(4-year program)*
  - 140 students each year (at Hatyai Campus)
  - 120 students each year (at Phuket Campus)

- **Master Degree Program** *(2-year program)*
  - 30 students each year
  - 5 students each year (at Phuket Campus from 2009/2010)

- **Ph.D. Program** *(3/4-year program)*
  - 5 students each year
Semester System

- The first semester commences at the beginning of June
  - Midterm Exam during the end of July and the beginning of August
  - Final Exam during the end of September and beginning of October
- The second semester commences at the beginning of November
  - Midterm Exam at the end of December
  - Final Exam during mid of February
- Summer vacation during March and May
Hat Yai Campus
We have both Thai and Foreign lecturers in our department.

Thai Lecturers
- Ph.D. (13)
- M. Eng. (10)
- B.Eng. (1)

Foreign Lecturers (2)
- Dr. Andrew Davison
- Robert Elz
PG Staff in Hat Yai Campus

- **Assoc. Prof. Dr. Sinchai KAMOLPHIWONG**
  - Computer Networking, Data Communications,
  - Computer Simulation, Performance Evaluation,
  - IP/ATM Networks, Network Protocols, Multimedia over Data Networks, Mobility on IP Networks, 3G Protocol,
  - E-learning/Distance Learning.

- **Assoc. Prof. Dr. Mitchai Chongcheawchamnan**
  - Wireless Communication

- **Assoc. Prof. Dr. Montri Karnjanadecha**
  - DSP, Speech Recognition, Image Processing, Robotics

- **Assoc. Prof. Thossaporn KAMOLPHIWONG**
  - Computer Networks, E-Learning System, Virtual Classroom
PG Staff in Hat Yai Campus

- **Asst. Prof. Dr. Taweesak Reungpeeralkul**
  - IC Testing

- **Asst. Prof. Dr. Pichaya Tandayya**
  - Parallel and Distributed Computing, Braille Computer System

- **Asst. Prof. Dr. Suntorn Witosurapat**
  - Differentiated Services, Information Engineering, Web Services and Applications

- **Asst. Prof. Dr. Thanate Kaorapapong**
  - Image processing, Control System, Robotics, DSP
PG Staff in Hat Yai Campus

- **Dr. Wannarat Suntiamorntut**

- **Dr. Aree Teeraparbseree**
  - Lexical Inter-Language

- **Dr. Anant Choksiriwong**
  - Pattern Recognition, Image Processing

- **Dr. Sangsuree Vasupongayya**
  - Intelligent Scheduling, Computer Security, Operating Systems

- **Dr. Somchai Limsiroratana**
  - Image Processing, Artificial Intelligence

- **Dr. Nikom Suwanworn**
  - Computer Vision, Image Processing
Foreign Staff in Hat Yai Campus

- **Dr. Andrew Davison**
  - Expert in Java
  - Some of his publications

- **Robert Elz**
  - Expert in Internet-related field, IPv6, Unix Enhancement
  - Internet Engineering Task Force (IETF) committee
  - **Request For Comments (RFCs):**
    - [RFC 2181] Clarifications to the DNS Specification.
Research Groups and Issues

- Center for Network Research (CNR)
  - Computer Networks

- ANW Informatics Laboratory
  - Advanced Information Engineering

- Wireless Sensor Network (WSN)

- Intelligent System (iSys) Research Team
  - Computer Control and Robotics
  - Computer System Design and VLSI Design
CNR: Past and Current Works

- **R&D of Next Generation Network Protocol**
  - Collaboration work:
    - **French:**
      - Department of Networks and Telecommunications, Institut National Polytechnique de Toulouse (INPT), ENSEEIHT, Toulouse, France
      - University of Paris VI
    - **Thailand:** PSU + CU + KMITNB + AIT

- **3G Mobile Phone Stack (Layer 2: RLC )**
  - National Research Collaboration Project
    - SIIT, PSU, KU, KMITL, KMITNB, SU, MTU
    - 80 people in this project
    - 53 MB for 3 years
CNR: Current Works (cont.)

- PSU Virtual Classroom
  - Interactive Distance Learning
- Voice/Video over IP Networks
  - Real-time Videoconference
- E-Learning Projects
  - Research Collaboration on Mobile and Adaptive Environment Collaboration with:
    - Thailand: PSU + CU + KU
    - France: Univ. La Rochelle + Univ. Poitiers
We are the first hub of Thailand

Our staff are key committee in
- Thailand IPv6 Council
- National IPv6 Testbed of Thailand

This project is funded by NECTEC (the National Electronic and Computer Technology), Ministry of Science Technology and Environment, and CHE (Commission of Higher Education, Ministry of Education.)
Current and Past Works:

- 3G Mobile Phone Applications
- Advanced Information Technologies & Applications in
  - Advanced Java & Software Engineering
  - Web Services & Service Oriented Architecture (SOA)
  - Wireless Information Technology
  - Home Networking (UPnP and OSGi environment)
- Virtual Intelligent Systems and Services (VISS)
- Medical Informatics
ANW: Past and Current Works

- **3G Mobile Phone Stack (Layer3: RRC)**
  - National Research Collaboration Project
    - SIIT, PSU, KU, KMITL, KMITNB, SU, MTU
  - 80 people in this project
  - 53 MB for 3 years

- **A Design of Portable RFID System for Class Attending Management**
  - Eclipse’s Rich Client Platform (RCP) Application Framework

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[Diagram of Eclipse's Rich Client Platform (RCP) Application Framework]
ANW: Past and Current Works

- Informatics for Integrated Intelligent (I3) Systems
  - I3 for Learning and Research Network (I3LeaRN)
  - I3 for Governance (I3G)
  - I3 for Health & Biomedical Engineering (I3HBME)
iSys: Past Works

- Thai Speech Recognition
- Distributed Interactive Simulation/High Level Architecture
- VLSI and PCB Design
  - FPGA/VHDL
  - IC Testing
iSys: Current Works

- Development of 3D Graphic Software and Hardware for Operation Simulation

- Grid and Cluster Computing
  - Parallel & Distributed Simulation Systems
  - Intelligent Scheduling Systems
  - Biogrid/Bioinformatics

- Image Processing
  - Counting cancer cells
  - Finding bubbles and dirt in rubber sheets
  - Fruit ripe status

- Computer Vision & Image Processing
iSys – Visual Surveillance System

Dr. Nikom
iSys – RoboCup & Vehicle Intelligent

- Control system
- Image processing
  - Dr. Montri
  - Dr. Thanate
  - Dr. Anant
**iSys – RoboCup & Vehicle Intelligent**

- **RoboCup** is an autonomous robotic system which integrates several of knowledge in Electrical Engineering, Computer Engineering, and Mechanical Engineering.
- **Goal**: To win Thailand RoboCup Championship and qualify for competing in World RoboCup tournament.
- **Students Involved:**
  - **Current:**
    - 14 UG students
    - 1 PG student

**Thailand RoboCup Championship:**
- 2005: qualified to compete in the final round
- 2006: Best Technical Award and the 3rd place winner
- 2007: the 2nd place winner, the Best Technical Award, and the Popular Vote Award
- 2007: 3rd place winner, the Best Technical Award.
An intelligent vehicle is an autonomous vehicle that can navigate a specific path without collision and can correctly respond to traffic signs.

Students Involved:
- 4 graduate students

Achievements from Thailand Intelligent Vehicle Challenge:
- 2007: the Creativity Award
- 2008: the Creativity Award
iSys: Braille Notebook

- Braille Notebook and Braille I/O Device
- Braille -XML– Thai Translation/Conversion
- Stereo Vision for the Visually Impaired

• 3rd Price Award and Peer's Choice Award in Student Design Challenge in 2nd International Convention on Rehabilitation Engineering & Assistive Technology (i-CREATe 2008)
iSys – Printer Quota Controller

Dr. Somchai
Dr. Thanate
Linux Research Gurus

Our gurus: Chatchai Janataraprim, Touchchai Angchuan …… Robert Elz

PSU LUG: PSU Linux User Group

We are a pioneer of using Linux in Thailand. Most of our server farm are running various Linux.
Phuket Campus
Academic Staff in Phuket Campus

- We have both Thai and Foreign lecturers in our department

- Thai Lecturers
  - M. Eng. (11)
  - B.Eng. (1)

- Visiting Foreign Lecturers (2)
  - Dr. Charlie Krey
  - Upal Mahfuz
Software laboratory
Hardware laboratory
Student Accommodation
Robotic Camp
Training Services
Meeting Hall
Academic Activities

- **Number of Publications**
  - ~ 18 papers/year

- **National Competition Awards**
  - 4-8 awards/year (since 2000)

- **Research Projects**
  - 6 projects from external grants
    - (about 10 millions Thai-Baht)
SOI and AIII Meeting Conference

- Participants from 12 countries in Asia
PSU Open in Phuket Campus
PSU Open in Phuket Campus
ACMICPC

2007 ACMICPC Regional Contest Singapore
13 – 14 December 2007

Prince of Songkla University: PSU-PKT
Amarin Deenagem – Coach
Akappan SOMJAL
Supawadee MAK-ON
Suererat KAEWKEREE
Trainit INTACHAK

14/12/2007
ABU Robocon
Visit to Singapore and Malaysia
Participated Annual Competitions

Actively involved in many competitions in Thailand:
- National Software Contest
- Thailand Robocup Championship
- Engineering Innovation
- Innovation of Thailand
- Embedded System Contest
- Thailand Intelligent Vehicle Challenge
- Samart Innovation Award
- Nokia N-Gage University Game Design and Challenge
Achievements

- 1st, 2nd and 3rd prizes in National Software Contest for several years
Achievements

- Thailand Robocup Championship
  - 2\textsuperscript{nd} prize in year 2007
  - 3\textsuperscript{rd} prize in year 2006, 2008
  - Best Technical Award in 3 consecutive years (2006-2008)
Achievements (cont.)

- Creative Award in Thailand: Intelligent Vehicle Challenge 2007 and 2008
- 3rd prize in Embedded System Contest 2007
- 2nd prize in Engineering Innovation 2004
- 3rd prize in Innovation of Thailand 2004
  - 3rd Price Award and Peer’s Choice Award in Student Design Challenge in i-CREATe 2008
Achievements (cont.)

- 3rd prize in Samart Innovation Award 2006
Achievements (cont.)

- One of our prides: Receiving a trophy from Royal Highness Princess Maha Chakri Sirinthorn for the 1st prize in National Software Contest
Our Ranking

- The 4th rank among the Computer Eng. Department in Thailand (in both Teaching and Research)

- Ranked by Higher Education Committee, Ministry of Education
Questions and Answers