



KITTIPAT APICHARTTRISORN

Address:

367 Winston Chung Hall
University of California, Riverside
900 University Ave Riverside, CA 92521

Website:

<http://www.kittipat.com>

Email:

me@kittipat.com

OBJECTIVE

A summer intern in computer science, systems engineering, software engineering and development

EDUCATION

Doctor of Philosophy, Computer Science

University of California, Riverside, California, USA GPA 4.00 / 4.00

September 2015 - Present

DISSERTATION -

ADVISOR - Prof. Dr. Srikanth Krishnamurthy and Prof. Jiasi Chen

Master of Science, Computer Science

Chulalongkorn University, Bangkok, Thailand GPA 3.75 / 4.00

May 2007 - November 2010

THESIS - Distributed Time Synchronization in Wireless Sensor Networks

ADVISORS - Asst. Prof. Dr. Chalermek Intanagonwiwat

Bachelor of Engineering, Electrical Engineering

Kasetsart University, Bangkok, Thailand GPA 2.49 / 4.00

June 2000 - October 2004

SENIOR PROJECT: Adaptive Multi-Rate - Wideband (AMR-WB) speech codec Testing

SENIOR PROJECT SUPERVISOR: Assoc. Prof. Dr. Mongkol Raksapatcharawong

EMPLOYMENT

Graduate Student Researcher

September 2015 - Present

Department of Computer Science and Engineer

University of California, Riverside, Riverside, CA, USA

- Research and teaching assistance
- Paper reviewing
- Volunteer in academic activities

Air Traffic Senior Systems Engineer

January 2007 - August 2015

Air Traffic Data Systems Engineering Department

Aeronautical Radio of Thailand, Bangkok, Thailand

- Administer, monitor, and maintain aeronautical data systems for which the Air Traffic Data Systems Engineering Department take responsibility so that the systems operate to support availability, safety and continuity of air

navigation services

- Perform preventive maintenance, corrective maintenance, software and hardware installation, and deployment of monitoring systems (e.g. ICMP, SNMP)
- Inspect and troubleshoot problems, coordinate and consult with related internal and external aeronautical units to troubleshoot problems and investigate causes of interruption or outage of data systems services
- Gather information from users and report usage and service problems to managers, programmers and the director, to improve systems' reliability, availability and serviceability

Network Engineer

March 2005 - September 2006

1tonet Co., Ltd., Bangkok, Thailand

- Design and implement voice over IP subsystems
- Integrate IP telephony with customers' existing public exchange systems

CERTIFICATES

- Certificate Name: *"ASP.NET Web Development with Visual Studio 2012"*
Content Web application basics, Web application development, Web form, Web server control, Debugging, Validation, Master pages, Themes, Web user control, ADO.NET, Linq, AJAX, State control
Certified by 9Expert Corporation, Bangkok, Thailand
Duration 10-12 February 2014
- Certificate Name: *"Embedded Software Engineering"*
Content Embedded Hardware Architecture, Operating Systems for Embedded Systems, Programming Embedded Systems, Embedded Systems I/O, Embedded Software Engineering
Certified by Computer Engineering Department, Chulalongkorn University and Software Industry Promotion Agency (SIPA)
Duration 22 - 27 October 2007
- Certificate Name: *"Certified Thaicom Users"*
Content General functionality of THAICOM satellites, Basic VSAT setup, Signal optimization and interference
Certified by THAICOM Public Company Limited
Duration 3 April 2007
- Certificate Name: *"Network Design and Implementation I"*
Content Design, analysis, implementation and troubleshooting of computer networks and hands-on workshops with CISCO routers and switches
Certified by Continuing Education Center, Chulalongkorn University
Duration 29 January 2005 - 23 April 2005

SKILLS

Programming Languages

- C, C++, nesC, Matlab, Java, Python, SQL

Computer Software Frameworks

- Ubuntu, UNIX, Gnuplot, Latex, TinyOS, ns-3, LLVM

Language Proficiency

- English: Fluent
- Thai: Native

PUBLICATIONS

- **“Stable Desynchronization for Wireless Sensor Networks: (I) Concepts and Algorithms (II) Performance Evaluation (III) Stability Analysis”**
Authors Supasate Choochaisri, Kittipat Apicharttrisorn, Chalermek Intanagonwiwat
Publication Name arXiv Computer Science, Network and Internet Architecture
Publication Date April 2017
URL (I) <https://arxiv.org/abs/1704.07002>, (II) <https://arxiv.org/abs/1704.07007>, (III) <https://arxiv.org/abs/1704.07010>
- **“Enhancing WiFi Throughput With PLC Extenders: A Measurement Study”**
Authors Kittipat Apicharttrisorn, Ahmed Osama Fathy Atya, Jiasi Chen, Karthikeyan Sundaresan, and Srikanth V. Krishnamurthy
Publication Name Passive and Active Measurement (PAM) 2017
Publication Date March 2017
URL https://link.springer.com/chapter/10.1007/978-3-319-54328-4_19
- **“A Moving Object Tracking Algorithm Using Support Vector Machines in Binary Sensor Networks”**
Authors Dusadee Apicharttrisorn, Kittipat Apicharttrisorn and Teerasit Kasetkasem
Publication Name The 13th International Symposium on Communications and Information Technologies
Publication Date September 2013
URL <http://dx.doi.org/10.1109/ISCIT.2013.6645915>
- **“Desynchronization with an artificial force field for wireless networks”**
Authors Supasate Choochaisri, Kittipat Apicharttrisorn, Kittiporn Korprasertthaworn, Pongpakdi Taechalert-paisarn and Chalermek Intanagonwiwat
Publication Name SIGCOMM Computer Communication Review
Publication Date March 2012
URL <http://dx.doi.org/10.1145/2185376.2185378>
- **“Energy-Efficient Gradient Time Synchronization for Wireless Sensor Networks”**
Authors Kittipat Apicharttrisorn, Supasate Choochaisri and Chalermek Intanagonwiwat
Publication Name 2010 Second International Conference on Computational Intelligence, Communication Systems and Networks (CICSyN)
Publication Date July 2010
URL <http://dx.doi.org/10.1109/CICSyN.2010.14>

ACADEMIC PROJECTS

- **Project Name:** Time Synchronization for Wireless Sensor Networks
Objective MS Thesis's Research Project
Description Time synchronization is a challenging but important task for wireless sensor networks (WSNs) because of the resource-constrained characteristics. This project aims to explore a distributed protocol and algorithm of time synchronization that is time-accurate and energy-efficient while maintaining a gradient time property.
Period January 2008 - October 2010
Roles and Responsibility Main investigator who reviews literature, designs, analyzes, and implements algorithms, finally produces a publication
Tools and Environments TinyOS, Ubuntu, Gnuplot, TelosB* motes

- Project Name: Desynchronization as Distributed Resource Allocations and TDMA
 - Objective** Research Project
 - Description** Desynchronization is an abstraction that arranges nodes' access a shared resource in a round-robin fashion. It can be applied to solve resource allocation problems especially in distributed systems. This research project aims to create novel distributed desynchronization algorithms and explore potential applications of network resource allocation.
 - Period** March 2010 - March 2013
 - Roles and Responsibility** Literature review, algorithm design, experimental running, and publications
 - Tools and Environments** TinyOS, TOSSIM, Ubuntu, Gnuplot
- Project Name: Moving Object Tracking in Binary Sensor Networks
 - Objective** Research Project
 - Description** Moving object tracking is a potential application of wireless sensor networks. Binary sensor networks require nodes only to send one-bit information to the central processing node which is responsible for signal processing tasks to track a moving object. This research project aims to explore a signal processing algorithm that tracks the object more accurately with tolerance to signal errors.
 - Period** March 2013 - March 2014
 - Roles and Responsibility** Literature review, experimental running, and publications
 - Tools and Environments** Matlab
- Project Name: Distributed Online Ticket Reservation with Display on Google Maps
 - Objective** Term Project (Graduate Course: Distributed Systems)
 - Description** This project aims to provide an opportunity for students to design and implement a distributed system which reserves online tickets and displays the status through Google Maps.
 - Period** June 2008 - October 2008
 - Roles and Responsibility** Design overall systems and demonstration
 - Tools and Environments** Microsoft .NET and Google Map APIs
- Project Name: Thailand's Undergrad Admission Systems: Information Systems Architecture
 - Objective** Term Project (Graduate Course: Information Systems Architecture)
 - Description** This project aims to provide an opportunity for students to design Thailand's Undergrad Admission Systems. During this term project, we combine each other's experience and viewpoints of information systems and brainstorm the viable solutions for the systems. The final document consists of the design of network, database, hardware, middleware, and software. The designed architecture is supposed to support thousands of concurrent users who use the system from registrations to final admission reports.
 - Period** June 2007 - October 2007
 - Roles and Responsibility** Part of group discussion and brainstorming sessions
 - Tools and Environments** MS Words, MS Visio
- Project Name: Adaptive Multi-Rate - Wideband (AMR-WB) speech codec Testing
 - Objective** Undergraduate Senior Project (Electrical Engineering Project)
 - Description** Adaptive Multi-Rate Wideband (AMR-WB) is a patented wideband speech coding standard developed based on Adaptive Multi-Rate encoding, using similar methodology as Algebraic Code Excited Linear Prediction (ACELP). AMR-WB provides improved speech quality due to a wider speech bandwidth of 50 - 7000 Hz compared to narrowband speech coders which in general are optimized for POTS wireline quality of 300 - 3400 Hz. This project aims to document the study of AMR-WB in both theoretical and practical aspects.
 - Period** June 2003 - Mar 2004
 - Roles and Responsibility** Design and conduct experiments, and document a project report
 - Tools and Environments** MS Visual C

* TelosB is a wireless sensor platform that is widely used by research laboratories worldwide.

PROFESSIONAL PROJECTS

- **Project Name:** Aeronautical Message Switching Systems (AMSS)
Description AMSS is a core aeronautical data system that switches, stores and manipulates aeronautical messages interexchanged between aeronautical units worldwide so that flights are managed and navigated safely and effectively.
Roles and Responsibilities Administer, monitor, and maintain the system, inspect and troubleshoot problems
Tools and Environments Redhat Enterprise, Windows Servers, Oracle Database 10g, Cisco switches and routers
- **Project Name:** Aeronautical Message Handling Systems (AMHS) and X.400
Description According to ICAO*, Aeronautical Message Handling System is a new standard for aeronautical ground-ground communications (e.g. for the transmission of NOTAM**, Flight Plans or Meteorological Data) based on X.400 profiles. Aeronautical Radio of Thailand made a progression to establish AMHS connectivity with several countries such as India, Singapore, Hong Kong, Italy, Laos, Vietnam, and Cambodia.
Roles and Responsibilities Test and record system connectivity and functionality
Tools and Environments Redhat Enterprise, Oracle Database 10g, ATN Routers, ISODE AMHS
- **Project Name:** Flight Data Management Center
Description Flight Data Management Center was established to unify clearance of national flight plans and their modifications to a single center in order to streamline air navigation operations. Computer-based systems are used to provide the functionality of FDMC.
Roles and Responsibilities Administer, monitor, and maintain the system, inspect and troubleshoot problems
Tools and Environments Java, Redhat Enterprise, MS Windows Servers, Oracle Database, Cisco switches and routers
- **Project Name:** Operational Aeronautical Meteorological Data (OPMET) and Regional OPMET Bulletins Exchange (ROBEX) Systems
Description Aeronautical Radio of Thailand was designated to provide a regional OPMET data bank of the Asia/Pacific region. Its core function is to accumulate and store aeronautical meteorological data that can be retrieved remotely and automatically by queries from relevant aeronautical organizations. ROBEX processes such data in the form of bulletins, a periodic conclusive report, and periodically send them to related aeronautical units.
Roles and Responsibilities Administer, monitor, and maintain the systems, inspect and troubleshoot problems
Tools and Environments Java, Redhat Enterprise, MS Windows Servers, Oracle Database, Cisco switches and routers

* ICAO (International Civil Aviation Organization) is a specialized agency of the United Nations which codifies the principles and techniques of international air navigation and fosters the planning and development of international air transport to ensure safe and orderly growth. Its headquarters are located in the Quartier International of Montreal, Quebec, Canada. ** NOTAM (Notice to Airmen) is a notice filed with an aviation authority to alert aircraft pilots of potential hazards along a flight route or at a location that could affect the safety of the flight. Aeronautical Radio of Thailand is authorized to provide a NOTAM data bank that stores and retrieves NOTAM messages which are distributed by AMSS and AMHS.

GRANTS AND SCHOLARSHIPS

- **Title:** Dean's Distinguished Fellowship 2015
Period September 2015 - September 2017
Purpose This fellowship award is granted to outstanding PhD applicants.
Amount Approximately 100,000 USD
Granted by Department of Computer Science and Engineering, University of California, Riverside, California, USA

- Title: International Conference Attendance Support Grants for Graduate Students

Period July 2010

Purpose This grant provides partial financial support for graduate students whose academic papers are accepted to be presented at an international conference.

Amount Approximately 900 USD

Granted by Graduate School, Chulalongkorn University Bangkok, Thailand

ACADEMIC ACTIVITIES

- External reviewer of ACM Transactions on Sensor Networks (2015) delegated by Prof. Dr. Jiannong Cao
- External reviewer of IEEE International Conference on Computer Communications (INFOCOM 2012) delegated by Asst. Prof. Dr. Chalermek Intanagonwivat
- External reviewer of IEEE International Conference on Computer Communications (INFOCOM 2011) delegated by Asst. Prof. Dr. Chalermek Intanagonwivat

VOLUNTEER SERVICES

- Voluntary Activity: CANSO* Global ATM Summit and 15th Annual General Meeting (AGM)

Period 11 June 2011 - 14 June 2011

Description : As Air Chief Marshal Somchai Thean-anant, a former President of Aeronautical Radio of Thailand delivered a policy to recruit the company's employees to volunteer to help organize these eminent events that welcomed hundreds of worldwide dignitaries and executives from all segments of the aviation industry. I applied for a volunteer position and was then selected, under the supervision of Ms. Tipaporn Nippakakorn, Vice President (Human Resource), to help organize the conference and seminar rooms at the Renaissance Hotel, Bangkok.

Contributions : Help organize meeting rooms

Benefits : Overall, the company succeeded in organizing these meetings which brought about and strengthen collaboration and understanding between global aeronautical organizations. My personal benefits included friendship with other employees from various departments of the company and awareness of aviation industry's next generation gathered during the conference and seminar attendance. Most importantly, I learn to volunteer myself to contributing back to my organization and aviation society without any pay.

*CANSO is the Civil Air Navigation Services Organization is the global voice of air navigation service providers (ANSPs) worldwide. CANSO's members support over 85 percent of world air traffic and share information and develop new policies, with the ultimate aim of improving air navigation services (ANS) on the ground and in the air.

- Community Website: Today's English for Thai ESL Students www.facebook.com/tetesthai

Period 30 November 2013 - Present

Description : ESL students in Thailand struggle to learn English partly because there is a lack of online communities in which they can ask questions, learn English, and share their experience with each other. Founded by Mr. Kittipat Apicharttrisorn, Today's English for Thai ESL Students or TETES fills in such a gap and starts to attract students with content contribution on English grammar and vocabulary taught in Thai.

Contributions : Content on English grammar and vocabulary

Benefits : To promote a learning environment for Thai ESL Students who plan to study abroad or work in an international organization

- Teaching Activity: English Teacher at Air Traffic Data Systems Engineering Department

Period 02 November 2012 - August 2015

Description : Deeming that English communications skills are essential for engineers and managers at Air Traffic Data Systems Engineering Department, I volunteer to be a teacher and initiate an English teaching project that helps provide them with English grammar and vocabulary that are used in daily life and engineering profession. I also focus my teaching on English conversation that can help them find it more comfortable speaking with native speakers they meet at international conferences and meetings.

Contributions : Teaching English to the departmental staff

Benefits : Engineers and managers start to get more comfortable communicating in English

REFERENCES

- Prof. Dr. Srikanth Krishnamurthy

Position Professor

Address Department of Computer Science and Engineering, University of California, Riverside,
CA 92521

Email krish@cs.ucr.edu

Tel. (+1) 951 827 2348

- Prof. Dr. Jiasi Chen

Position Assistant Professor

Address Department of Computer Science and Engineering, University of California, Riverside,
CA 92521

Email jjiasi@cs.ucr.edu

Tel. (+1) 951 827 2348

- Dr. Chalermek Intanagonwiwat

Position Software Engineer

Address Arista Networks, Santa Clara, California, USA, 95054

Email intanago@arista.com

Tel. (+1) 415 902 1808

- Mr. Pongnarin Anantasirijinda

Position Director of Air Traffic Data Systems Engineering Department

Address Aeronautical Radio of Thailand, Bangkok, Thailand, 10120

Email add@aerothai.co.th

Tel. (+66) 2285-9101

- Asst. Prof. Dr. Teerasit Kasetkasem

Position Assistant Professor of Electrical Engineering

Address Electrical Engineering Department, Kasetsart University, Bangkok, Thailand, 10900

Email fengtsk@ku.ac.th

Tel. (+66) 2797-0999 ext 1536