ศาสตราจารย์ ดร. นิพนธ์ ธีรอำพน
Prof. Nipon Theera-Umpon, Ph.D., IEEE Senior Member
สถาบันวิศวกรรมชีวการแพทย์
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โฮมเพจ: http://ee.eng.cmu.ac.th/nipon

ประวัติการศึกษา	

- **Ph.D.** in Electrical Engineering, May 2000 University of Missouri-Columbia, Columbia, Missouri, U.S.A. (Aug 1996 - May 2000)
- **M.S.** in Electrical Engineering, May 1996 University of Southern California, Los Angeles, California, U.S.A. (Jan 1995 - May 1996)
- **วิศวกรรมศาสตรบัณฑิต (เกียรตินิยม)** สาขาวิศวกรรมไฟฟ้า กุมภาพันธ์ พ.ศ. 2536 มหาวิทยาลัยเชียงใหม่ (มิถุนายน พ.ศ. 2532 - กุมภาพันธ์ พ.ศ. 2536)

ประสบการณ์การทำงาน	

- **ผู้อำนวยการ และ ประธานคณะกรรมการบริหาร**
  สถาบันวิศวกรรมชีวการแพทย์ (Biomedical Engineering Institute)
  มหาวิทยาลัยเชียงใหม่ (ชื่อเดิม ศูนย์วิศวกรรมชีวการแพทย์ มหาวิทยาลัยเชียงใหม่)
  (ตุลาคม 2553 - ปัจจุบัน)

- **รองคณบดีฝ่ายวิจัยและวิเทศสัมพันธ์**
  คณะวิศวกรรมศาสตร์ มหาวิทยาลัยเชียงใหม่ (มีนาคม พ.ศ. 2548 - มีนาคม พ.ศ. 2552)

- **ประธานคณะกรรมการบริหารหลักสูตรบัณฑิตศึกษา**
  ○ วิศวกรรมศาสตรมหาบัณฑิต (M.Eng.) และ ปรัชญาดุษฎีบัณฑิต (Ph.D.) สาขา วิศวกรรมชีวการแพทย์ (หลักสูตรนานาชาติ) มหาวิทยาลัยเชียงใหม่ (มีนาคม พ.ศ. 2551 - ตุลาคม พ.ศ. 2561)
  ○ วิศวกรรมศาสตรมหาบัณฑิต (M.Eng.) และ ปรัชญาดุษฎีบัณฑิต (Ph.D.) สาขา วิศวกรรมไฟฟ้า มหาวิทยาลัยเชียงใหม่ (สิงหาคม พ.ศ. 2547 – มกราคม พ.ศ. 2550)

- **ข้าราชการพลเรือนในสถาบันอุดมศึกษา**
  ภาควิชาวิศวกรรมไฟฟ้า คณะวิศวกรรมศาสตร์ มหาวิทยาลัยเชียงใหม่ ตั้งแต่เมษายน พ.ศ. 2536-ปัจจุบัน (ลาศึกษาต่อ ณ ประเทศสหรัฐอเมริกาตั้งแต่ พ.ศ. 2538 ถึง 2543)
  ○ ศาสตราจารย์ (พฤศจิกายน พ.ศ. 2561 - ปัจจุบัน)
  ○ รองศาสตราจารย์ (กุมภาพันธ์ พ.ศ. 2549 – พฤศจิกายน พ.ศ. 2561)
  ○ ผู้ช่วยศาสตราจารย์ (กุมภาพันธ์ พ.ศ. 2546 – กุมภาพันธ์ พ.ศ. 2549)
  ○ อาจารย์ (เมษายน พ.ศ. 2536 – กุมภาพันธ์ พ.ศ. 2546)

กระบวนวิชาที่สอน (ระดับปริญญาตรี)
- Engineering Stochastic Processes
- Electromagnetic Fields and Waves I
- Electromagnetic Fields and Waves II
- Radio Systems
- Digital Signal Processing
- Basic Electrical Engineering Laboratory
- Electronic Engineering Laboratory
- Biomedical Engineering in Daily Life
- Analytical Chemistry and Clinical Laboratory Instrumentation (คณะเทคนิคการแพทย์)

Supervising senior projects of Electrical Engineering students

กระบวนวิชาที่สอน (ระดับบัณฑิตศึกษา)
- Digital Signal Processing
- Advanced Digital Signal Processing
- Digital Signal Processing in Telecommunications
- Principles of Digital Communications
- Error Control Coding in Digital Communications
- Optical Communications
- Computer Vision
- Mathematics for Biomedical Engineering
- Digital Signal Processing for Biomedical Engineering
- Seminar for Biomedical Engineering
- Medical Imaging (คณะเทคนิคการแพทย์)
- Biosignaling in Movement (คณะเทคนิคการแพทย์)
- Advanced Public Health Informatics (คณะสาธารณสุขศาสตร์)

Supervising theses of Electrical Engineering graduate students, Computer Engineering graduate students, and Biomedical Engineering students.

- **นักวิชาการเยี่ยมเยือน (Visiting Scholar)**

  Department of Computer Engineering and Computer Science, University of Missouri-Columbia (May 2000 - May 2001)
  - Conducting research in the Computational Intelligence Research Laboratory. Research emphasizes on signal and image processing in land mine detection in the humanitarian demining project.

  Faculty of Engineering, Kagawa University, Takamatsu, Japan, May 1-31, 2004. (Funded by the Royal Thai Government)
  - Conducting collaborative research in the Sawada Research Laboratory. Research emphasizes on robotics and signal processing in speech and human interface.
  - Giving a lecture in an IEEE special lecture.

  Faculty of Engineering, Kagawa University, Takamatsu, Japan, October 16-25, 2004. (Funded by the International Exchange Foundation, Kagawa University)
  - Discuss on the MOU between Faculty of Engineering, Chiang Mai University and Kagawa University.

- ○ Conducting collaborative research in the Sawada Research Laboratory. Research emphasizes on robotics and signal processing in speech and human interface.
- ○ Giving a special lecture.

Faculty of Engineering Technology, KU Leuven, Leuven, Belgium, February 2017. (Funded by the ERASMUS+ Programme)

- **ผู้ช่วยวิจัย (Research Assistant)**
  Department of Computer Engineering and Computer Science, University of Missouri-Columbia (Winter 1996 - Winter 2000)
  - ○ Conducting research in the Computational Intelligence Research Laboratory. Research emphasizes on the development of granulometric estimation methods based on the morphological granulometry and the applications of the methods to the white blood cell differential counting in human bone marrow images.
  - ○ Conducting research in the Computational Intelligence Research Laboratory. Research emphasizes on the development of morphological neural networks in the detection and classification of military targets (Tanks, APCs, etc.) in Synthetic Aperture Radar (SAR) images collected by the U.S. Air Force (MSTAR data set.)

ประสบการณ์ทางด้านวิชาชีพ	- **Technical Committee**, Human Factors, IEEE Industrial Electronics Society (2009-)
	 - **Travel Grant Subcommittee**, IEEE Computational Intelligence Society, (2016)
	 - **Technical Subcommittee**, Computer Applications for Intelligent Human Interface, IEEE Industrial Electronics Society (2006-2009)
	 - **Elected Senior Member IEEE**, (Signal Processing Society, Computational Intelligence Society, Industrial Electronic Society, Engineering in Medicine and Biology Society)
	   — Student Member: 1998–May 2000
	   — Member: May 2000–Jan 2006
	   — Senior Member: Jan 2006–present
	 - **Life Member**, The Asia-Pacific Signal and Information Processing Association (APSIPA)
	 - **Vice President**, Korea Convergence Society
	 - **สมาชิกกิตติมศักดิ์** สมาคมวิทยาศาสตร์สัตว์ทดลองแห่งประเทศไทย
	 - **กรรมการประจำ** คณะกรรมการจริยธรรมการวิจัยในคน มหาวิทยาลัยเชียงใหม่
	 - **กรรมการสายวิชาการวิศวกรรมชีวการแพทย์** สมาคมวิชาการไฟฟ้า อิเล็กทรอนิกส์ คอมพิวเตอร์ โทรคมนาคม และสารสนเทศแห่งประเทศไทย
	 - **ที่ปรึกษา** สมาคมเทคโนโลยีสุขภาพไทย (**อุปนายก** สมาคมเทคโนโลยีสุขภาพไทย 2019–2022)
	 - **อุปนายก** สมาคมวิศวกรรมการแพทย์และชีววิทยาไทย
	 - **สมาชิก** สภาวิศวกร (ใบอนุญาตประกอบวิชาชีพไฟฟ้ากำลัง และ ไฟฟ้าสื่อสาร)
	 - **สมาชิก** วิศวกรรมสถานแห่งประเทศไทย ในพระบรมราชูปถัมภ์ (วสท.)
	 - **กรรมการ,** คณะทำงานขับเคลื่อนด้านการพัฒนาเมืองอัจฉริยะ (Smart City) ของจังหวัด

เชียงใหม่ (2016-2019)

- **สมาชิก** สมาคมวิชาการหุ่นยนต์ไทย
- **สมาชิก** สมาคมวิศวกรรมชีวการแพทย์ไทย
- **ผู้ทรงคุณวุฒิในการประเมินตำแหน่งทางวิชาการ**
  - มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี
  - มหาวิทยาลัยสงขลานครินทร์
  - มหาวิทยาลัยเทคโนโลยีราชมงคล
  - มหาวิทยาลัยรังสิต
  - มหาวิทยาลัยวลัยลักษณ์
  - Sirindhorn International Institute of Technology
  - Xi'an Jiaotong-Liverpool University, China
  - King Saud University, Saudi Arabia
- Editor
  - Applied Sciences (Guest Editor, A special Issue on Interdisciplinary Applications: Data and AI Technologies for Healthcare and Biomedicine for/in Human Life), 2021.
  - Methods and Protocols (Guest Editor, A special Issue on Smartphone Apps, Micro-Controller Kits, and Webservers for Scientific Research), 2021.
  - International Journal of Emerging Multidisciplinary Research (2017-).
  - Mathematical Problems in Engineering (Guest Editor, A special Issue on Information Analysis of High Dimensional Data and Applications), 2015.
  - ECTI Transactions on Electrical Engineering, Electronics, and Communications (Guest Editor, A special Issue on Advanced Image Technology), 2007.
  - International Journal of Advanced Computational Intelligence and Intelligent Informatics (Guest Editor) Vol. 8, No. 6, Nov 2004.
  - Proceedings of the International Conference on Intelligent Technologies 2003 (InTech'03) (with S. Auephanwiriyakul and S. Dhompongsa.)
- Associate Editor
  - ECTI Transactions on Electrical Engineering, Electronics, and Communications (2010-).
- Vice Editor-in-Chief
  - KIPS Transactions on Computer and Communication Systems (2018-).
  - KIPS Transactions on Software and Data Engineering (2018-).
- Editorial Board:
  - Scientific Phone Apps and Mobile Devices
  - Journal of Industrial Electronics Technology and Application
  - Journal of Industrial Information Technology and Application
  - Journal of Korea Convergence Society
  - Journal of Health Science and Alternative Medicine
  - Thailand Journal of Health Technology
  - Journal of the Thai Medical Informatics Association
- Keynote/Invited Speaker
  - "Silicon Photonics System Using Ring Resonator Structure," Invited Speaker, *International Advanced Material & Energy Technology Collaboration Symposium 2023*, Chiang Mai, Thailand, October 2023. (in English)
  - "A.I. and Digital Technology in Biomedicine," Keynote Speaker, *The*

15th International Conference on Frontiers of Information Technology, Applications and Tools (FITAT 2023), Ulaanbaatar, Mongolia, September 2023. (in English)

○ "Biomedical Engineering: Engineering for Life," Invited Speaker, *National Cheng Kung University (NCKU)*, Tainan, Taiwan, June 2023. (in English)

○ "A.I. and Digital Technology in Biomedicine," Keynote Speaker, *2023 International Symposium on Innovation in Information Technology and Application*, Bangkok, Thailand, February 2023. (in English)

○ "Digital Transformation in Thailand," Plenary Speaker, *The 11th International Conference on Green and Human Information Technology*, Bangkok, Thailand, January 2023. (in English)

○ "Digital Transformation: Technology and Strategy in Thailand," Invited Speaker, *2022 International Symposium on the South East Asia DX Strategy and Cooperation*, Cheongju, Korea, October 2022. (in English)

○ "Innovation: Engineering for Life," Invited Speaker, *National EMS Forum 2022: Research and Innovation on Emergency Medicine*, Bangkok, Thailand, October 2022. (in Thai)

○ "A.I. and Digital Technology in Biomedicine and Healthcare," Keynote Speaker, *APSIPA Workshop on Signal and Information Processing in Vietnam*, Hanoi, Vietnam, August 2022. (in English)

○ "Smart Healthcare: An Important Component of Smart City," Keynote Speaker, *The KITS International Conference 2022*, Jeju, Korea, June 2022. (in English)

○ "Biomedical Engineering: Engineering for Life," Invited Speaker, *SAH Virtual Mini Symposium,* School of Allied Health Sciences, Walailak University, Thailand, February 2022. (in English)

○ "*Fire-Elephant*: IoT-based Smoke Detector Platform," Invited Speaker, *The 15th International Conference on Crisis & Emergency Management*, Cheongju, Korea, November 2021. (in English)

○ "A.I. and Digital Technology in Health Science," Invited Speaker, *The 18th International Conference on The Dental Faculty Consortium of Thailand "Collaborative Research in Dentistry"*, Chiang Mai, Thailand, November 2021. (in Thai)

○ "A.I. in Health Technology," Keynote Speaker, *Conference on Health Technology of Thailand (HTCON2021)*, Bangkok, Thailand, May 2021. (in Thai)

○ "A.I. & Digital Technology in Health Science," Invited Speaker, *Research Club*, Faculty of Dentistry, Chiang Mai University, Thailand, March 2021. (in Thai)

○ "Artificial Intelligence in Medicine," Invited Speaker, *Lighten Me(d) Up, Chiang Mai University Medical Student Organization (CMSO)*, Thailand, February 2021. (in Thai)

○ "Computational Intelligence, Biomedical Signal & Image Processing in Medicine," Invited Speaker, *Chiang Mai University Medical Student Organization (CMSO)*, Thailand, December 2020. (in Thai)

○ "A.I. in Biomedicine," Keynote Speaker, *The 16th International Conference on Intelligent Information Hiding and Multimedia Signal Processing (IIHMSP 2020) / The 13th International Conference on Frontiers of Information Technology, Applications and Tools (FITAT*

2020), Ho Chi Minh, Vietnam, November 2020. (in English)

○ "A.I. in Biomedical Engineering," Invited Speaker, *Asia Pacific Neural Network Assembly (APNNA) Education Forum Series: Deep Learning and Artificial Intelligence Winter School 2020 (DLAI4)*, Bangkok, Thailand, November 2020. (in English)

○ "Digital Signal Processing in Biomedical Engineering," Invited Speaker, *The Biomedical Engineering Forum of China (Guangxi)-ASEAN, The 4th Academic Meeting of Life Sciences Institute*, Guangxi Medical University, Nanning, China, October 2020. (in English)

○ "Biomedical Engineering: Research, Innovation, and Collaboration," Invited Speaker, Faculty of Associated Medical Sciences, Chiang Mai University, Thailand, June 2020. (in Thai)

○ "A.I. in Biomedicine," Invited Speaker, Faculty of Nursing, Chiang Mai University, Thailand, December 2019. (in Thai)

○ "A.I. in Biomedical Engineering," Invited Speaker, *The Biomedical Engineering Forum of China (Guangxi)-ASEAN, The 3rd Academic Meeting of Life Sciences Institute*, Guangxi Medical University, Nanning, China, November 2019. (in English)

○ "A.I. in Biomedical Engineering," Invited Speaker, *The 45th Congress on Science and Technology of Thailand (STT45), Mae Fah Luang University*, Chiang Rai, Thailand, October 2019. (in Thai)

○ "A.I. in Medical Imaging," Invited Speaker, *Bio Investment Asia*, BITEC, Bangkok, Thailand, September 2019. (in English)

○ "A.I. in Biomedicine," Invited Speaker, Silicon Craft Technology, Bangkok, Thailand, May 2019. (in Thai)

○ "A.I. for Biomedical Applications," Invited Speaker, *Workshop on Artificial Intelligence and Cyber Security, International Conference on Green and Human Information Technology*, Kuala Lumpur, Malaysia, January 2019. (in English)

○ "A.I. in Biomedicine," Invited Speaker, *The 3rd Thailand-Korea Mini Symposium on Integrated Materials Research*, Kantary Hills Hotel, Chiang Mai, Thailand, January 2019. (in English)

○ "Healthcare Innovations for Elderly," Invited Speaker, *Gerontological Nurses Association Conference*, Chiang Mai, Thailand, December 2018. (in Thai)

○ "A.I. in Biomedicine," Invited Speaker, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand, October 2018. (in Thai)

○ "Digital Transformation," Invited Speaker, Mae Moh Power Plant, Electricity Generating Authority of Thailand, Lampang, Thailand, May 2018. (in Thai)

○ "Applications of Signal Processing to Rehabilitation and Assistive Technologies," Keynote Speaker, *International Conference on Information, System and Convergence Applications*, Bangkok, Thailand, February 2018. (in English)

○ "Smart Nurse: Leader for Change," Invited Speaker, *McCormick Association of Nurse Annual Meeting*, Chiang Mai, Thailand, December 2017. (in Thai)

○ "Biomedical Engineering Applications: Lab Animals Use," Invited Speaker, *TALAS International Symposium and Workshop*, Bangkok,

Thailand, June 2017. (in English)

○ "Healthcare Innovation for Elderly," Invited Speaker, McCormick Hospital, Chiang Mai, Thailand, April 2017. (in Thai)

○ "Healthcare Innovation: Inspiration," Invited Speaker, *Workshop on Inspiration for Healthcare Innovation*, Mae Fah Luang University, Chiang Rai, Thailand, April 2017. (in Thai)

○ "Innovations for Elderly," Invited Speaker, *Healthy Aging in Aged Society*, Chiang Mai, Thailand, March 2017. (in Thai)

○ "Digital Signal Processing in Biomedicine," Invited speaker, KU Leuven, Leuven, Belgium, February 2017. (in English)

○ "Signal Processing for Rehabilitation and Assistive Technologies," Keynote Speaker, *Conference on Rehabilitation Engineering and Assistive Technology Society of Korea (RESKO 2016)*, KINTEX, Goyang-si, Korea, November 2016. (in English)

○ "Morphological Granulometries: Alternative Tool for Shape Representation," Keynote Speaker, *International Conference on Information, System and Convergence Applications*, Chiang Mai, Thailand, July 2016. (in English)

○ "Innovations for Elderly Care," Invited Speaker, Faculty of Nursing and Srinagarind Hospital, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand, July 2016. (in Thai)

○ "Computational Intelligence in Automatic Land Mine/Unexploded Ordnance (UXO) Detection," Invited Speaker, *Defence Technology Institute*, Nonthaburi, Thailand, May 2016. (in Thai)

○ "Microcalcification Detection in Mammograms Using Fuzzy Inference Systems," Keynote Speaker, *International Conference on Frontiers of Information Technology, Applications and Tools*, Zhuhai, China, April 2016. (in English)

○ "Computational Intelligence in Biomedical Engineering," Invited Speaker, *ICT Virtual Organization of ASEAN Institutes and NICT*, Chiang Mai, Thailand, February 2016. (in English)

○ "Innovations for Elderly Care," Invited Speaker, Nursing Services Center, CMU, and Gerontological Nurses Association, Chiang Mai, Thailand, November 2015. (in Thai)

○ "Data Mining for Biological/Medical Applications," Invited Speaker, Chungbuk National University, Cheongju, Korea, October 2015. (in English)

○ "Microcalcification Detection in Mammograms Using Interval Type-2 Fuzzy Logic System with Automatic Membership Function Generation," Invited Speaker, Faculty of Medicine, Prince of Songkhla University, Songkhla, Thailand, March 2015. (in Thai)

○ "Biomedical Engineering Innovation for Fluoride and Fluorosis Surveillance in Thailand: Automatic Dental Fluorosis Classification Using Multi-Prototypes from Fuzzy C-Means Clustering," Invited Speaker, *The 32nd Conference of the International Society for Fluoride Research*, Chiang Mai, Thailand, November 2014. (in English)

○ "Shape Representation Using Morphological Granulometries," Invited Speaker, *International Conference on Frontiers of Information Technology, Applications and Tools*, Chiang Mai, Thailand, July 2014. (in

English)

○ "Biomedical Engineering in Health Innovations," Invited Speaker, *Innovation for Health: Show & Share*, Chiang Mai, Thailand, May 2014. (in Thai)

○ "Webcam-based Smart ID Card Reader," Invited Speaker, *The 22nd Thai Medical Informatics Association Annual Conference*, Miracle Grand, Bangkok, November 2013. (in Thai)

○ "Applying Fuzzy Clustering to Image Segmentation," Keynote Speaker, *International Conference on Frontiers of Information Technology, Applications and Tools*, Cheongju, Korea, September 2013. (in English)

○ "Speech Processing in Forensic Science," Invited Speaker, *Cyber Crime Conference*, Chiang Mai, Thailand, September 2013. (in Thai)

○ "Computational Intelligence in Biomedical Engineering," Invited Speaker, *The R10 Seminar, IEEE R10 Annual General Meeting*, Chiang Mai, Thailand, March 2013. (in English)

○ "Boundary Detection in Medical Images Using Edge Following Algorithm Based on Intensity Gradient and Texture Gradient Features," Invited Speaker, *The 2012 Ubiquitous Healthcare Conference*, Gyeongju, Korea, October 2012. (in English)

○ "Computational Intelligence in Biomedical Engineering Applications," Invited Speaker, Chungbuk National University, Cheongju, Korea, October 2012. (in English)

○ "Biomedical Engineering @ CMU," Invited speaker, *International Life Sciences Innovation Conference*, Shangri-La Hotel, Chiang Mai, June 2012. (In English)

○ "Digital Signal Processing and Digital Image Processing Applications in Biomedical Engineering," Keynote Speaker, *The 2012 International Conference on Convergence Technology*, Ho Chi Minh City, Vietnam, January 2012. (in English)

○ "Computational Intelligence in Biomedical Engineering," Invited speaker, *Advanced Statistical Methods for Healthcare Research*, Kantary Hill Hotel, Chiang Mai, August 2011. (in Thai)

○ "Computer Softwares in Biomedicine," Invited speaker, *Innovative Medical Materials and Instrument*, National Innovation Agency, Bangkok, March 2011. (in Thai)

○ "Cervical Cell Classification Using Fourier Transform and Nucleus Based Features," Invited speaker, *The 19th Thai Medical Informatics Association Annual Conference*, Impact Muang Thong Thani, November 2010. (in Thai)

○ "Computational Intelligence in Biomedical Engineering Applications," Invited speaker, *Medical Data Standards Expo*, Queen Sirikit National Convention Center, August 2010. (in Thai)

○ "Computational Intelligence in Biomedical Engineering Applications," Invited speaker, *Computation Science in Biomedicine*, Mahidol University, August 2010. (in Thai)

○ "Computational Intelligence in Biomedical Engineering Applications," Invited speaker, *International Conference on Computation in Science and Technology*, Chiang Mai, August 2010. (in English)

○ "Ionospheric F-Layer Critical Frequency Estimation from Digital

Ionogram Analysis," *Educational Research Exchange Joint Symposium*, Chiang Mai, Thailand, December 2007. (in English)

○ "Computational Intelligence in Automatic White Blood Cell Counting," Invited speaker, Faculty of Medicine, Chiang Mai University, October 2007. (in Thai)

○ "Computational Intelligence in Humanitarian Demining: Make the World a Safer Place," Keynote Speaker, *Tri-University International Joint Seminar and Symposium*, Mie, Japan, October 2006. (in English)

○ "Training Neural Networks to Count White Blood Cells in Microscopic Bone Marrow Images," Invited Speaker, U.S.-Thai Symposium on Biomedical Engineering, Bangkok, December 2005. (in English)

○ "Computer Applications in Automatic White Blood Cell Counting," Invited speaker, Faculty of Associated Medical Sciences, Chiang Mai University, February 2005. (in English)

○ "Computational Intelligence in Automatic White Blood Cell Counting," Invited speaker, Kagawa University, Takamatsu, Japan, October 2004. (in English)

○ "Signal and Image Processing in Land Mine Detection," Invited speaker, *IEEE Special Lecture*, Kagawa University, Takamatsu, Japan, May 2004. (in English)

○ "Application of Random Set Theory and Fractal Geometry in Engineering," Invited speaker at the Department of Mathematics, Chiang Mai University, in the *Workshop on Fractal Geometry and Analysis of Random Sets and Their Applications*, December 2002. (in English)

- **General Chair**
  ○ Asia Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC) 2022.

- **General Co-Chair and Secretary**
  ○ Electrical/Electronics, Computer, Telecommunications and Information Technology Conference (ECTI-CON) 2010.

- **Vice General Chair**
  ○ International Conference on Information, System and Convergence Applications, Kuala Lumpur, Malaysia, June 2015.

- **Technical Chair**
  ○ The IEEE International Conference on Fuzzy Systems 2024 (FUZZ-IEEE 2024), Yokohama, Japan, June 2024.
  ○ The 12th International Conference on Computational Systems-Biology and Bioinformatics (CSBio 2021), Thailand, October 2021.
  ○ The 16th International Conference on Intelligent Information Hiding and Multimedia Signal Processing (IIHMSP 2020) / The 13th International Conference on Frontiers of Information Technology, Applications and Tools (FITAT 2020), Ho Chi Minh, Vietnam, November 2020.
  ○ IEEE International Conference on Computational Intelligence in Bioinformatics and Computational Biology, Chiang Mai, Thailand, October 2016.
  ○ International Conference on Computer & Convergence Computing, Las Vegas, USA, January 2016.
  ○ International Workshop on Advanced Image Technology 2014, Bangkok, January 2014.

- o Biomedical Engineering International Conference (BMEiCON), 2011.
- o IEEE International Symposium on Biomedical Engineering (IEEE ISBME), December 2009.
- o International Symposium on Intelligent Signal Processing and Communication Systems, Bangkok, December 2008.
- o International Workshop on Advanced Image Technology 2007, Bangkok, January 2007.
- o International Conference on Intelligent Technologies 2003, Chiang Mai, December 2003.

- **Program Committee Chair**
  - o International Conference on Computer Engineering, Dubai, UAE, October 2015.
  - o International Conference on Information and Convergence Technology for Smart Society, Bangkok, Thailand, January 2015.
  - o International Symposium on Personalized Medicine, Cheongju, Korea, September 2013.

- **Publication Chair**
  - o Asia-Pacific Signal and Information Processing Association Annual Summit and Conference, Siem Reap, December 2014.

- **Organizing Chair**
  - o International Conference on Advanced Computational Intelligence, Chiang Mai, February 2016.

- **International Cooperation Chair**
  - o International Conference on Information, System and Convergence Applications, Manila, The Philippines, July 2014.

- **Local Arrangement Chair**
  - o International Technical Conference on Circuits/Systems, Computers and Communications 2006, Chiang Mai, July 2006.

- **Associate Technical Chair**
  - o International Symposium on Intelligent Signal Processing and Communication Systems, December 2011.

- **Steering Committee**
  - o International Conference on Computer & Convergence Computing, Las Vegas, USA, 2016.
  - o International Conference on Internet of Things and Convergence, Daejeon, Korea, 2015.
  - o Electrical/Electronics, Computer, Telecommunications and Information Technology Conference, 2011-2013.

- **Organizing Committee**
  - o International Conference on Intelligent Technologies 2003 (InTech'03), Chiang Mai, December 2003.
  - o The 3rd Asian International Mobile Computing (AMOC-2004) Conference, Bangkok, May 2004.

- **Local Publicity**
  - o International Conference on Power Control and Optimization 2008, Chiang Mai, July 2008.

- **Local Technical Committee**
  - o International Conference on Green and Sustainable Innovation 2006, Chiang Mai, November 2006.

- **International Advisory Committee**
  - International Conference on Control, Instrumentation and Mechatronic Engineering 2009, Malacca, Malaysia, June 2009.
- **Session Chair**:
  - International Workshop on Smart Grid Technology and Data Processing, 2016.
  - International Conference on Information and Convergence Technology Smart Society, (ICICTS), 2016.
  - International Conference on Information, System and Convergence Applications (ICISCA), 2014.
  - International Conference on the Frontiers of Information Technology, Application and Tools (FITAT), 2013.
  - Biomedical Engineering International Conference (BMEiCON), 2011.
  - International Symposium on Biomedical Engineering (ISBME), 2009.
  - Electrical/Electronics, Computer, Telecommunications and Information Technology Conference (ECTI-CON), 2008, 2009, 2010.
  - IEEE International Conference on Mechatronics and Automation, Takamatsu, Japan, August 2008.
  - International Technical Conference on Circuits/Systems, Computers and Communications, Chiang Mai, July 2006.
  - International Conference on Fuzzy Systems and Knowledge Discovery, Changsha, Hunan, China, August 2005.
  - IEEE Region 10 Technical Conference (IEEE-TENCON), Chiang Mai, November 2004.
  - International Conference on Intelligent Technologies 2003, Chiang Mai, December 2003.
  - 2002 IEEE International Conference on Systems, Man, and Cybernetics, Hammamet, Tunisia, October 2002.
  - The 25th, 26th, 27th, 28th Electrical Engineering Conference, 2002-2005.
  - National Computer Science and Engineering Conference, 2005.
  - The 4th National Symposium on Graduate Research, Chiang Mai, Thailand, August 2004.
- **ผู้ทรงคุณวุฒิประเมินโครงการวิจัย**
  - Qatar National Research Fund (QNRF), Qatar
  - Medical Research Council, UK
  - Irish Research Council
  - National Research Foundation of Korea
  - Thailand Research Fund (TRF)
  - National Research Council of Thailand (NRCT)
  - National Electronics and Computer Technology Center (NECTEC)
  - National Center for Genetic Engineering and Biotechnology (BIOTEC)
  - Industry/University Cooperative Research Center (I/UCRC) in HDD Advanced Manufacturing
  - Science and Technology Research Institute, Chiang Mai University
  - Research Network (Upper Middle Part of Thailand), Office of the Higher Education Commission
  - Xi'an Jiaotong-Liverpool University, China
  - Chiang Mai University
  - Prince of Songkhla University
  - King Mongkut's University of Technology North Bangkok

- ○ Phayao University
- ○ Maejo University
- ○ Payap University
- ● ผู้ทรงคุณวุฒิพิจารณาบทความ (Reviewer) สำหรับ
  <u>ระดับนานาชาติ</u>
  - ○ IEEE Transactions on Fuzzy Systems
  - ○ IEEE Transactions on Image Processing
  - ○ IEEE Transactions on Neural Networks and Learning Systems
  - ○ IEEE Transactions on Medical Imaging
  - ○ IEEE Transactions on Biomedical Engineering
  - ○ IEEE Transactions on Information Technology in Medicine
  - ○ IEEE Transactions on Systems, Man and Cybernetics Part A
  - ○ IEEE Transactions on Systems, Man and Cybernetics Part B
  - ○ IEEE Transactions on Systems, Man and Cybernetics Part C
  - ○ IEEE Transactions on Industrial Electronics
  - ○ IEEE Journal of Biomedical and Health Informatics
  - ○ IEEE Access
  - ○ APSIPA Transactions on Signal and Information Processing
  - ○ IET Signal Processing
  - ○ Expert Systems with Applications
  - ○ Pattern Recognition
  - ○ Computer Methods and Programs in Biomedicine
  - ○ Artificial Intelligence in Medicine
  - ○ Journal for Biomedical Optics
  - ○ Journal of Mathematical Imaging and Vision
  - ○ Journal of Electronic Imaging
  - ○ Journal of Biomedicine and Biotechnology
  - ○ BioMed Research International
  - ○ Computational and Mathematical Methods in Medicine
  - ○ Computational Biology and Chemistry
  - ○ Journal of Medical Imaging and Health Informatics
  - ○ Wireless Personal Communications
  - ○ Neurocomputing
  - ○ Neural Computing and Applications
  - ○ Information Systems
  - ○ The Scientific World Journal
  - ○ Scientific Phone Apps and Mobile Devices
  - ○ Mathematical Problems in Engineering
  - ○ Journal of Sensors
  - ○ PLOS ONE
  - ○ Methods
  - ○ ETRI Journal
  - ○ International Journal of Computers and Applications
  - ○ IEICE Transactions on Information and Systems
  - ○ IEICE Electronics Express
  - ○ Australian Journal of Electrical and Electronics Engineering
  - ○ ECTI Transactions on Electrical Engineering, Electronics, and Communications
  - ○ ECTI Transactions on Computer and Information Technology
  - ○ African Journal of Agricultural Research

- ○ IEEE International Conference on Communications (ICC)
- ○ IEEE International Conference on Fuzzy Systems (FUZZIEEE)
- ○ IEEE International Conference on Systems, Man, and Cybernetics (IEEE-SMC)
- ○ IEEE Symposium Series on Computational Intelligence (IEEE-SSCI)
- ○ IEEE International Conference on Human System Interaction (HSI)
- ○ IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB)
- ○ IEEE Region 10 Technical Conference (IEEE-TENCON)
- ○ International Conference on Imaging Theory and Applications (IMAGAPP)
- ○ International Conference on Intelligent Technologies (InTech)
- ○ Asian International Mobile Computing Conference (AMOC)
- ○ International Symposium on Biomedical Engineering (ISBME)
- ○ International Conference on Active Media Technology (AMT)
- ○ International Conference on Natural Computation (ICNC)
- ○ International Workshop on Advanced Image Technology (IWAIT)
- ○ Electrical/Electronics, Computer, Telecommunications and Information Technology Conference (ECTI-CON)
- ○ Asian Conference on Defence Technology (ACDT)
- ○ Asia-Pacific Conference on Communications (APCC)

ระดับชาติ
- ○ Chiang Mai University Journal
- ○ Chiang Mai Journal of Science
- ○ Songklanakarin Journal of Science and Technology
- ○ KKU Research Journal
- ○ KKU Science Journal
- ○ Naresuan University Journal
- ○ Engineering Journal, Chiang Mai University
- ○ Conference for Electrical Engineering (EECON)
- ○ Electrical/Electronics, Computer, Telecommunications and Information Technology Conference on Application Research and Development (ECTI-CARD)
- ○ TRS Conference on Robotics and Industrial Technology (CRIT)
- ○ National Computer Science and Engineering Conference (NCSEC)

เกียรติประวัติ และรางวัล	

- **เครื่องราชอิสริยาภรณ์**
  - ○ เหรียญจักรพรรดิมาลา พ.ศ. 2563
  - ○ ประถมาภรณ์ช้างเผือก พ.ศ. 2560
  - ○ ประถมาภรณ์มงกุฎไทย พ.ศ. 2556
  - ○ ทวีติยาภรณ์ช้างเผือก พ.ศ. 2552
  - ○ ทวีติยาภรณ์มงกุฎไทย พ.ศ. 2548
  - ○ ตริตาภรณ์มงกุฎไทย พ.ศ. 2545
  - ○ จัตุรถาภรณ์ช้างเผือก พ.ศ. 2541
- **รางวัลตำราดีเด่นด้านวิศวกรรมศาสตร์** กองทุนเพื่อการศึกษาและวิจัยทางด้านวิศวกรรมศาสตร์ ในพระราชูปถัมภ์สมเด็จพระบรมโอรสาธิราชฯ สยามมกุฎราชกุมาร **วิศวกรรมสถานแห่งประเทศไทย ในพระบรมราชูปถัมภ์ (วสท.) ประจำปี 2565** จากตำรา "**การประมวลผลสัญญาณและภาพดิจิทัล: ทฤษฎีและการประยุกต์ใช้**" โดย นิพนธ์ ธีรอำพน
- **ได้รับทุนจากรัฐบาลไทยเพื่อศึกษาต่อระดับปริญญาโทและเอก ณ ประเทศ**

สหรัฐอเมริกา (ธันวาคม พ.ศ. 2537 - พฤษภาคม พ.ศ. 2543)

- **ข้าราชการพลเรือนดีเด่น (เข็มครุฑทองคำ)** รัฐบาลไทย พ.ศ. 2558
- **นักศึกษาเก่าดีเด่น** สมาคมนักศึกษาเก่า มหาวิทยาลัยเชียงใหม่ พ.ศ. 2566
- **รางวัลช้างทองคำ นักวิจัยดีเด่น** มหาวิทยาลัยเชียงใหม่ พ.ศ. 2556
- **นักศึกษาเก่าดีเด่น** สมาคมนักศึกษาเก่าคณะวิศวกรรมศาสตร์ มหาวิทยาลัยเชียงใหม่ พ.ศ. 2553
- **รางวัลช้างทองคำ อาจารย์ดีเด่น** มหาวิทยาลัยเชียงใหม่ พ.ศ. 2551
- **Appreciation Award** for endeavour and dedication, Society of Convergence and Integrated Research (SCIR), Korea, 2015.
- **รางวัลวิทยานิพนธ์ ระดับดีเด่น** สำนักงานคณะกรรมการวิจัยแห่งชาติ (วช.) พ.ศ. 2548 จากวิทยานิพนธ์ "Morphological Granulometric Estimation with Random Primitives and Applications to Blood Cell Counting" by Nipon Theera-Umpon, University of Missouri-Columbia, U.S.A., May 2000.
- **Best Paper Award**, from the paper entitled "Automobile Parts Localization Using Multi-layer Multi-model Images Classifier Ensemble," by Nattapat Karaket, Sansanee Auephanwiriyakul, and Nipon Theera-Umpon, in *the 16th International Conference on Intelligent Information Hiding and Multimedia Signal Processing (IIHMSP 2020) / The 13th International Conference on Frontiers of Information Technology, Applications and Tools (FITAT 2020)*, Ho Chi Minh City, Vietnam, November 2020.
- **Best Paper Award**, from the paper entitled "Person Identification from Ear Images using Convolution Neural Networks," by Sansanee Auephanwiriyakul, Natchapon Petaitiemthong, Potsawat Chuenpet, and Nipon Theera-Umpon, in *the IEEE International Conference on Control System, Computing and Engineering*, Penang, Malaysia, November 2019.
- **Best Paper Award**, from the paper entitled "A Novel Self Organizing Feature Map (SOFM) for Uncertain Data," by Sansanee Auephanwiriyakul and Nipon Theera-Umpon, in *the International Conference on Green and Human Information Technology*, Kuala Lumpur, Malaysia, January 2019.
- **Best Paper Award**, from the paper entitled "Facial Expression Recognition Using String Grammar Fuzzy K-Nearest Neighbor," by Payungsak Kasemsumran, Sansanee Auephanwiriyakul, and Nipon Theera-Umpon, in *the International Conference on Computational Science and Its Application*, Beijing, China, July 2016.
- **Best Paper Award**, from the paper entitled "Automatic White Blood Cell Detection in Low Resolution Bright Field Microscopic Images," by Usanee Apijuntarangoon, Nipon Theera-Umpon, Chatchai Tayapiwattana, and Sansanee Auephanwiriyakul, in *the International Conference on Information, System and Convergence Applications*, Kuala Lumpur, Malaysia, June 2015.
- **Best Paper Award**, from the paper entitled "Eye-Gaze Distance Estimation Using Eigenvalues of Iris Region," by W. Ponglangka, N. Theera-Umpon, and S. Auephanwiriyakul, in *the International Conference on Information, System and Convergence Applications*, Manila, The Philippines, July 2014.
- **Best Paper Award**, from the paper entitled "Coil Defect Inspection in Pivot Arm Assembly," by N. Theera-Umpon, T. Chantorn, S. Auephanwiriyakul and Anusorn Yodjaiphet, in *the International Data Storage Technology Conference (DST-CON2011)*, Bangkok, Thailand, November 2011.

- **Best Paper Award**, from the paper entitled "Fuzzy Clustering Patch-Based Automatic Nucleus Segmentation of Bone Marrow White Blood Cells" by Nipon Theera-Umpon, in *the 27th Electrical Engineering Conference*, Khon Kaen, Thailand, November 2004.
- **Albert Nelson Marquis Lifetime Achievement Award**, Marquis, New Jersey, 2017.
- Biographical profile was selected and listed in **Who's Who in Science and Engineering**, the key biographical facts on more than 30,000 men and women leading today's scientific and technological revolution around the world, Marquis, New Jersey, since 2003.
- Biographical profile was selected and listed in **Who's Who in Asia**, Marquis, New Jersey, since 2006.
- Biographical profile was selected and listed in **Who's Who in the World**, Marquis, New Jersey, since 2005.
- **Coordinator**, establish a research collaboration between the Faculty of Engineering, Chiang Mai University, THAILAND and the College of Engineering, University of Missouri–Columbia, U.S.A., 2000.
- **Coordinator**, establish an academic and research collaboration between the Faculty of Engineering, Chiang Mai University, THAILAND and the Faculty of Engineering, Kagawa University, Japan, 2005.
- **Coordinator**, establish an academic and research collaboration between Chiang Mai University, THAILAND and Chungbuk National University, Korea, 2013.
- **Post Doctoral Fellow**, Department of Computer Engineering and Computer Science, University of Missouri-Columbia, U.S.A., 2000-2001.
- **เหรียญรางวัลเรียนดี** คณะวิศวกรรมศาสตร์ มหาวิทยาลัยเชียงใหม่ พ.ศ. 2533
- **ประธานนักเรียนจากการเลือกตั้ง** โรงเรียนขอนแก่นวิทยายน พ.ศ. 2531

| สิทธิบัตรที่ได้รับการจดทะเบียน | - **สิทธิบัตรการประดิษฐ์ เลขที่ 91016** เครื่องวัดความชื้นและค่าไดอิเล็กตริกของวัสดุโดยเทคนิคการวัดค่าความจุไฟฟ้า โดย นิพนธ์ ธีรอำพน, สนอง อมฤกษ์, วิโรจน์ ปงลังกา, ศันสนีย์ เอื้อพันธ์วิริยะกุล (วันขอรับสิทธิบัตร 7 เมษายน พ.ศ. 2553, วันที่ได้รับการจดทะเบียนสิทธิบัตร 17 มกราคม พ.ศ. 2566) |

| ผลงานตีพิมพ์ | Book Chapters |

- Tsatsral Amarbayasgalan, Kwang Ho Park, Khishigsuren Davagdorj, Keun Ho Ryu, and **Nipon Theera-Umpon**, "Variational Autoencoder based Deep Neural Network for Coronary Heart Disease Risk Prediction," *Advances in Intelligent Information Hiding and Multimedia Signal Processing. Smart Innovation, Systems and Technology*, Shu-Chuan Chu, Shi-Huang Chen, Zhenyu Meng, Keun Ho Ryu, George A. Tsihrintzis (Eds.), Vol. 277, pp. 1-8, Springer Nature Switzerland, July 2022.
- Sansanee Auephanwiriyakul, Suwannee Phitakwinai, and **Nipon Theera-Umpon**, "Fuzzy Multilayer Perceptrons for Fuzzy Vector Regression," *Women in Computational Intelligence*, Alice E. Smith (Ed.), pp. 255–279. Springer Nature Switzerland, April 2022.
- Nattapat Karaket, Sansanee Auephanwiriyakul and **Nipon Theera-Umpon**, "Automobile Parts Localization Using Multi-layer Multi-model Images

Classifier Ensemble," *Advances in Intelligent Information Hiding and Multimedia Signal Processing*, Jeng-Shyang Pan, Jianpo Li, Keun Ho Ryu, Zhenyu Meng, Aleksandra Klasnja-Milicevic (Eds.), pp. 367-376, *Smart Innovation, Systems and Technologies*, Vol. 212, Springer Nature Singapore, April 2021.

- Khongorzul Munkhbat, Bilguun Jargalsaikhan, Tsatsral Amarbayasgalan, **Nipon Theera-Umpon**, and Keun Ho Ryu, " Emotional Piano Melodies Generation Using Long Short-Term Memory," *Intelligent Information and Database Systems*, Ngoc Thanh Nguyen, Suphamit Chittayasothorn, Dusit Niyato, Bogdan Trawinski (Eds.), Vol. 12672, pp. 667-677, Springer Nature Switzerland, 2021.

- Lkhagvadorj Munkhdalai, Meijing Li, **Nipon Theera-Umpon**, Sansanee Auephanwiriyakul, and Keun Ho Ryu, "VAR-GRU: A Hybrid Model for Multivariate Financial Time Series Prediction," *Intelligent Information and Database Systems*, N. T. Nguyen, K. Jearanaitanakij, A. Selamat, B. Trawinski, S. Chittayasothorn (Eds.), Vol. 1072, pp. 322-332, Springer Nature Switzerland, 2020.

- Panuwit Pholkerd, Sansanee Auephanwiriyakul, and **Nipon Theera-Umpon**, "Companies Trading Signs Prediction Using Fuzzy Hybrid Operator with Swarm Optimization Algorithms," *Intelligent Computing and Optimization*, P. Vasant, I. Zelinka, G.-W. Weber (Eds.), Vol. 1072, pp. 420-429, Springer Nature Switzerland, 2019.

- Somnuek Surathong, Sansanee Auephanwiriyakul, and **Nipon Theera-Umpon**, "Decision Fusion Using Fuzzy Dempster-Shafer Theory," *Lecture Notes in Computer Science*, H. Unger, S. Sodsee, P. Meesad, pp. 115-125, Springer Nature Switzerland, 2018.

- Chakkraphop Maisen, Sansanee Auephanwiriyakul, and **Nipon Theera-Umpon**, "Incorporating Learning Vector Quantization in Neuro-Fuzzy System," *Lecture Notes in Artificial Intelligence*, Nguyen, N.T., Tojo, S., Nguyen, L.M., Trawinski, B., Vol. 10191, pp. 528-544, Springer-Verlag Berlin Heidelberg, 2017.

- Payungsak Kasemsumran, Sansanee Auephanwiriyakul, and **Nipon Theera-Umpon**, "Facial Expression Recognition Using String Grammar Fuzzy K-Nearest Neighbor," *Lecture Notes in Computer Science*, Gervasi, O., Murgante, B., Misra, S., Rocha, A.M.A.C., Torre, C.M., Taniar, D., Apduhan, B.O., Stankova, E., Wang, S. (Eds.), Vol. 9787, pp. 584-596, Springer, Switzerland, July 2016. **[Best Paper Award]**

- Yuttana Munklang, Sansanee Auephanwiriyakul, and **Nipon Theera-Umpon**, "Synthetic Aperture Radar (SAR) Automatic Target Recognition (ATR) Using Fuzzy Co-occurrence Matrix Texture Feature," *Recent Advances in Computational Intelligence in Defense and Security (Studies in Computational Intelligence)*, pp. 467-489, Rami Abielmona, Rafael Falcon, Nur Zincir-Heywood, Hussein Abbass (Eds.), Springer, October 2015.

- Luis Frazao, Rui Santos, Miguel Cacho Teixeira, **Nipon Theera-Umpon**, and Sansanee Auephanwiriyakul, "Automatic Detection of Yeast and Pseudohyphal Form Cells in the Human Pathogen Candida glabrata," *Intelligent Computing Theories and Methodologies*, Huang, De-Shuang, Han, Kyungsook (Eds.), *Lecture Notes in Artificial Intelligence*, Vol. 9227, pp. 669-678, Springer-Verlag Berlin Heidelberg, August 2015.

- Sansanee Auephanwiriyakul, Patison Palee, Orathai Suttijak, and **Nipon Theera-Umpon**, "Borehole Diameter Inspection for Hard Disk Drive Pivot Arms Using Hough Transform in Panorama Images," *Visual Inspection Technology in the Hard Disk Drive Industry*, Paisarn Muneesawang and Suchart Yammen (Eds.), pp. 183-195, Wiley, 2015.

- Thanatip Chankong, **Nipon Theera-Umpon**, and Sansanee Auephanwiriyakul, "Automatic Cervical Cell Classification Using Patch-Based Fuzzy Clustering and Minimum Average Correlation Energy Filter," *IFMBE Proceedings*, Vol. 43, James Goh (Ed.), pp. 164-167, Springer, 2014.

- **Nipon Theera-Umpon**, Panyaphon Phiphatkhunarnon, and Sansanee Auephanwiriyakul, "Linear Prediction-based Reconstruction of Electrocardiogram with Premature Ventricular Contraction for Heart Rate Variability Analysis," *Future Information Communication Technology and Applications*, H.-K. Jung, J.T. Kim, T. Sahama, and C.-H. Yang (Eds.), *Lecture Notes in Electrical Engineering*, Vol. 235, Chapter 30, pp. 273-281, Springer-Verlag Berlin Heidelberg, June 2013.

- Yuttana Munklang, Sansanee Auephanwiriyakul, and **Nipon Theera-Umpon**, "A Novel Fuzzy Co-occurrence Matrix for Texture Feature Extraction," *Computational Science and Its Applications*, B. Murgante, et. al. (Eds.), *Lecture Notes in Computer Science*, Vol. 7973, pp. 246-257, Springer-Verlag Berlin Heidelberg, June 2013.

- Narissara Eiamkanitchat, **Nipon Theera-Umpon**, and Sansanee Auephanwiriyakul, "Colon Tumor Microarray Classification Using Neural Network with Feature Selection and Rule-Based Classification," *Advances in Neural Network Research and Applications*, Zhigan Zen and Jun Wang (Eds.), *Lecture Notes in Electrical Engineering*, Vol. 67, pp. 363–372, Springer-Verlag Berlin Heidelberg, 2010.

- Thanatip Chankong, **Nipon Theera-Umpon**, and Sansanee Auephanwiriyakul, "Cervical Cell Classification using Fourier Transform," *IFMBE Proceedings*, Vol. 23, Chwee Tech Lim and James C.H. Goh (Eds.), pp. 476–480, Springer, 2009.

- Suwannee Phitakwinai, Sansanee Auephanwiriyakul, and **Nipon Theera-Umpon**, "Thai Sign Language Translation Using Fuzzy C-Means and Scale Invariant Feature Transform," *Computational Science and Its Applications*, O. Gervasi, B. Murgante, A. Lagana, D. Taniar, Y. Mun, M.L. Gavrilova (Eds.), *Lecture Notes in Computer Science*, Vol. 5073, pp. 1107–1119, Springer-Verlag Berlin Heidelberg, 2008.

- **Nipon Theera-Umpon**, "Ionospheric F-Layer Critical Frequency Estimation from Digital Ionogram Analysis," *Computational Science and Its Applications*, O. Gervasi and M.L. Gavrilova (Eds.), *Lecture Notes in Computer Science*, Vol. 4707, pp. 190–200, Springer-Verlag Berlin Heidelberg, 2007.

- **Nipon Theera-Umpon**, "White Blood Cell Segmentation and Classification in Microscopic Bone Marrow Images," *Fuzzy Systems and Knowledge Discovery*, L. Wang and Y. Jin (Eds.), *Lecture Notes in Computer Science*, Vol. 3614, pp. 787–796, Springer-Verlag Berlin Heidelberg, 2005.

International Journals

- Lkhagvadorj Munkhdalai, Tsendsuren Munkhdalai, Jang-Eui Hong, Van-Huy Pham, **Nipon Theera-Umpon**, and Keun Ho Ryu, "Discrimination Neural Network Model for Binary Classification Tasks on Tabular Data," *IEEE Access*, Vol. 11, pp. 15404-15418, February 2023.

- Ritipong Wongkhuenkaew, Sansanee Auephanwiriyakul, **Nipon Theera-Umpon**, Kasemsit Teeyapan, and Uklid Yeesarapat, "Fuzzy K-Nearest Neighbor Based Dental Fluorosis Classification Using Multi-Prototype Unsupervised Possibilistic Fuzzy Clustering via Cuckoo Search Algorithm," *International Journal of Environmental Research and Public Health*, Vol. 20, No. 4, 18 pages, 2023.

- Krittapat Bannajak, **Nipon Theera-Umpon**, and Sansanee Auephanwiriyakul, "Signal Acquisition-Independent Lossless Electrocardiogram Compression Using Adaptive Linear Prediction," *International Journal of Environmental Research and Public Health*, Vol. 20, No. 3, 16 pages, 2023.

- Lkhagvadorj Munkhdala, Tsendsuren Munkhdala, Van Huy Pham, Keun Ho Ryu, and **Nipon Theera-Umpon**, "Neural Network-Augmented Locally Adaptive Linear Regression Model for Tabular Data," *Sustainability*, Vol. 14, No. 22, 22 pages, November 2022.

- Meijing Li, Xianhe Zhou, Keun Ho Ryu, and **Nipon Theera-Umpon**, "An Ensemble Semantic Textual Similarity Measure Based on Multiple Evidences for Biomedical Documents," *Computational and Mathematical Methods in Medicine*, Vol. 2022, Article ID 8238432, 14 pages, August 2022.

- Khishigsuren Davagdorj, Ling Wang, Meijing Li, Van Huy Pham, Keun Ho Ryu, and **Nipon Theera-Umpon**, "Discovering Thematically Coherent Biomedical Documents Using Contextualized Bidirectional Encoder Representations from Transformers-Based Clustering," *International Journal of Environmental Research and Public Health*, Vol. 19, 21 pages, May 2022.

- Suruk Udomsom, Apiwat Budwong, Chanyanut Wongsa, Pakorn Sangngam, Phornsawat Baipaywad, Chawan Manaspon, Sansanee Auephanwiriyakul, **Nipon Theera-Umpon**, and Pathinan Paengnakorn, "Automatic Programmable Bioreactor with pH Monitoring System for Tissue Engineering Application," *Bioengineering*, Vol. 9, No. 5, 12 pages, April 2022.

- Lkhagvadorj Munkhdalai, Tsendsuren Munkhdalai, Pham Van Huy, Meijing Li, Keun Ho Ryu, and **Nipon Theera Umpon**, "Recurrent Neural Network-Augmented Locally Adaptive Interpretable Regression for Multivariate Time-series Forecasting," *IEEE Access*, Vol. 10, pp. 11871-11885, February 2022.

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- Khishigsuren Davagdorj, Jang-Whan Bae, Van Huy Pham, **Nipon Theera-Umpon**, and Keun Ho Ryu, "Explainable Artificial Intelligence based Framework for Non-Communicable Diseases Prediction," *IEEE Access*, Vol. 9, pp. 123672-123688, September 2021.

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- Krit Somkantha and **Nipon Theera-Umpon**, "A Novel Edge Following Technique for Ill-Defined Edge Detection and Its Application to Prostate

Ultrasound Images," *Proceedings of the 30th Electrical Engineering Conference*, pp. 785-788, Kanchanaburi, Thailand, October 2007.

- **Nipon Theera-Umpon**, "Fuzzy Clustering Patch-Based Automatic Nucleus Segmentation of Bone Marrow White Blood Cells," *Proceedings of the 27th Electrical Engineering Conference*, pp.125–128, Khon Kaen, Thailand, November 2004. **[Best Paper Award]**

- Sansanee Auephanwiriyakul, Siripen Attrapadung, Sutasinee Thovutikul, and **Nipon Theera-Umpon**, "Calcification Detection in Mammograms using Fuzzy Inference System," *Proceedings of the 27th Electrical Engineering Conference*, pp.165–168, Khon Kaen, Thailand, November 2004.

- **Nipon Theera-Umpon**, "Time-Domain Analysis in Unexploded Ordnance Detection using Ground Penetrating Radar," *Proceedings of the 26th Electrical Engineering Conference*, pp. 1075–1080, Cha-am, Thailand, November 2003.

- **Nipon Theera-Umpon**, "Automatic White Blood Cell Classification in Bone Marrow Images using Morphological Features," *Proceedings of the 25th Electrical Engineering Conference*, pp. DS108–112, Prince of Songkla University, Thailand, November 2002.

- Udomsak Boonprasert, Chewasak Rakpenthai, and **Nipon Theera-Umpon**, "A Comparison of Support Vector Machines and Backpropagation Neural Networks in Adaptive Power System Stabilizer," *Proceedings of the 25th Electrical Engineering Conference*, pp. PW278–282, Prince of Songkla University, Thailand, November 2002.

National Conferences (in Thai)

- Kasin Prakobwaitayakit, Boonterd Boonsuwan, **Nipon Theera-Umpon**, Jirasuk Vilasdechanon, Kiti Likit-Anurucks, "Power Failure Automatic Shutdown System for UNIX", *Proceedings of the 17th Electrical Engineering Conference*, King Mongkut's Institute of Technology Northern Bangkok, Thailand, Nov. 1994. (in Thai)

- **Nipon Theera-Umpon**, Thanakorn Tongbai, Kasin Prakobwaitayakit, Jirasuk Vilasdechanon, Kiti Likit-Anurucks, "Time Recorder for Small Company", *Proceedings of the 17th Electrical Engineering Conference*, King Mongkut's Institute of Technology Northern Bangkok, Thailand, Nov. 1994. (in Thai)

- Jirasuk Vilasdechanon, Noppadol Saenmaneechai, **Nipon Theera-Umpon**, Kasin Prakobwaitayakit, Kiti Likit-Anurucks, "Remote Emergency Alarm System", *Proceedings of the 17th Electrical Engineering Conference*, King Mongkut's Institute of Technology Northern Bangkok, Thailand, Nov. 1994. (in Thai)

Presentations (Without full-paper)

- Dumnoensun Pruksakorn, Sakkadech Limmahakhun, Taninnit Leerapun, Kassisin Klunklin, Peraphan Pothachareon, **Nipon Theera-Umpon**, Olarn Arpornchayanon, "The Serum Biomarker Analysis of Human Osteosarcoma," *The 16th International Symposium on Limb Salvage*, Beijing, China, September 2011.

- Sakkadech Limmahakhun, Peraphan Pothacharoen, Olarn Arpornchayanon, Taninnit Leerapun, Dumnoensun Pruksakorn, Sirichai Luevitoonvechkij,

Nipon Theera-Umpon, "Comparison of multiple biochemical markers in high-grade osteosarcoma," *Combined Meeting of the Orthopaedic Research Societies*, Kyoto, Japan, October 2010.

Invited Papers (Non-refereed)

- Sirirat Panuthai, Chiraporn Tachaudomdach and Chomphoonut Srirat, and **Nipon Theera-Umpon**, "Development of "Kratib Kao" for Controlling Rice Consumption for Older Persons with Diabetes," *CMU-KU 7th Joint Int'l Symposium*, pp. 107-110, Chiang Mai, Thailand, 2018.

- Nattapong Swangmuang, Kasemsak Uthaichana, Hideyuki Sawada, and **Nipon Theera-Umpon**, "Development of Translucent Mangosteen Classification by Acoustic-based Sensing", *CMU-KU 4th Joint Int'l Symposium*, p. 39, Takamatsu, Japan, 2012.

- Mitsuki Kitani, Nattapong Swangmuang, Kasemsak Uthaichana, **Nipon Theera-Umpon**, and Hideyuki Sawada, "Towards the Non-destructive Inspection of Translucent Mangosteens: First Trial by Employing Acoustic Signal Response and SOM Classification", *CMU-KU 4th Joint Int'l Symposium*, p. 40, Takamatsu, Japan, 2012.

- Nattapong Swangmuang , Kasemsak Uthaichana, Hideyuki Sawada, and **Nipon Theera-Umpon**, "Acoustic-Based Signal Transmission for Mangosteen Internal Quality Measures," *CMU-KU 3rd Joint Int'l Symposium*, pp. 32-34, Chiang Mai, Thailand, 2010.

- **Nipon Theera-Umpon**, "Computational Intelligence in Humanitarian Demining: Make the World a Safer Place," *Tri-University International Joint Seminar and Symposium*, pp.1–8, Mie, Japan, October 2006.

- **Nipon Theera-Umpon**, "Computational Intelligence in Differential White Blood Cell Counting," *National Computer Science and Engineering Conference (NCSEC)*, pp.1023–1029, Bangkok, October 2005.

ความเชี่ยวชาญ	Pattern Recognition, Digital Image Processing, Neural Networks, Fuzzy Systems, Digital Signal Processing, Artificial Intelligence, Medical Imaging, Machine Learning, Big Data Analysis, Data Mining

ทุนวิจัย	"Digital Platform for Dental Bone Graft," National Research Council of Thailand and National Telecom PCL, 2022-2023 (In Progress) "Development of High-Performance Particulate Matter Sampling/Analyzer System for Biomedical Engineering Research," The Office of National Higher Education Science Research and Innovation Policy Council, 2022- (In Progress) "Creation of Wireless Basic Vital Sign Monitoring Device (CMUgency) and GPS Tracking Device (CM-GPS)," National Research Council of Thailand, 2021-2023 (In Progress) "Use Case for 5G Network: Remote Ultrasound," Advanced Info Service PCL, 2021- (Completed) "CMU Smart Weight Balance Device," National Research Council of Thailand, 2021- (Completed)

- "Design and Build of COVID-19 Biophotonic-based Rapid Detection System Prototype," The Office of National Higher Education Science Research and Innovation Policy Council, 2020- (In Progress)
- "Production of Porcine Meat from Myosatellite Cells for Consumption: CMU Q-lean Pork," The Office of National Higher Education Science Research and Innovation Policy Council, 2020- (In Progress)
- "Pilot Project for Design-Build Silicon Photonic Devices Based on Resonating Ring Structure for Biological Analyte Detection," The Office of National Higher Education Science Research and Innovation Policy Council, 2020-2021 (Completed)
- "Development of Running Shoe Insoles Production from Natural Rubber Using 3D Data and Acrylic Mold," Science and Technology Park, 2020-2021 (Completed)
- "Basic Vital Signs Measurement Device with GPS Tracking and Wireless Communication for Emergency Medical Service Vehicles," National Research Council of Thailand, 2019-2020 (Completed)
- "Machine Learning System Prototype for Digital Power Plant," Electricity Generating Authority of Thailand, 2018-2019 (Completed)
- "Intelligent Target Detection Using Low-cost Ground Penetrating Radar (GPR) System," Defence Technology Institute, 2018-2019 (Completed)
- "Image-Based Out-Of-Area Alert System for Elderly," Council of University Presidents of Thailand, 2018-2019 (Completed)
- "Development of Sound Source Localization and Speech Detection for Dinsow Mini Robot," Thailand Research Fund, 2018-2019 (Completed)
- "Smart Kratib: Food Container for Carbohydrate Consumption Control," Council of University Presidents of Thailand, 2017-2018 (Completed)
- "Vision-based Closed-loop Control for Robot Navigation," Defence Technology Institute, 2016-2019 (Completed)
- "License Plate Recognition System," Tara Isuzu Co. Ltd., 2017 (Completed)
- "Intelligent Target Detection Using Ground Penetrating Radar (GPR)," Defence Technology Institute, 2016- 2017. (Completed)
- "Indoor Fall Detector System Using Kinect," Thailand Toray Science Foundation, 2015-2016. (Completed)
- "Improvement of Training Process in Pattern Recognition Using Clustering Method," Chiang Mai University Research Fund, 2014-2015. (Completed)
- "Herb Classification from Leave Images on Android System," True Corporation Public Company Limited, 2013-2014. (Completed)
- "Short-Term Load Forecasting Using Support Vector Machine on Internet and Mobile Phone Networks," True Corporation Public Company Limited, 2013-2014. (Completed)
- "Design and Development of Software for Dental Fluorosis Diagnosis using Digital Imaging," Intercountry Centre for Oral Health, 2011 – 2012. (Completed)
- "Development of Assessment Software for Elderlies' Skeleton Abnormalities Using Digital Imaging Technology," Intercountry Centre for Oral Health, 2011 – 2012. (Completed)
- "EKG Solution: Portable Electrocardiograph," National Innovation Agency and Prodigis Co. Ltd., 2011 – 2012. (Completed)

- "Development of Automatic Defect Inspection System in Pivot Arm and Coil Assembly Process," Industry/University Cooperative Research Center (I/UCRC) in HDD Advanced Manufacturing and Lanna Thai Electronic Components (LTEC) Ltd., 2010 – 2011. (Completed)
- "Development of Acoustic Based Method for Complimenting Other Non-destructive Internal Inspection of Mangosteens" Postharvest Technology Innovation Center, 2010 – 2011. (Completed)
- "Comparison of Multiple Biochemical Markers in High-Grade Osteosarcoma," Faculty of Medicine, Chiang Mai University, 2009 – 2010. (Completed)
- "Thai Sign Language Translation System in the Communication with the Deaf," Telecommunications Research and Industrial Development Institute (TRIDI), 2008 – 2009. (Completed)
- "Automatic Defect Inspection System in Pivot Arm and Coil Assembly Process," National Electronics and Computer Technology Center and Lanna Thai Electronic Components (LTEC) Ltd., 2006 – 2008. (Completed)
- "Thai Phoneme Segmentation and Recognition," Ministry of Science and Technology, 2006 – 2007. (Completed)
- "Automatic HIV/AIDS Prescription System," Biomedical Engineering Center, Chiang Mai University, 2006 – 2007. (Completed)
- "Personal Computer-based Electrocardiograph via USB Port," Biomedical Engineering Center, Chiang Mai University, 2006 – 2007. (Completed)
- "Development of Breast Abnormality Detection System," Royal Thai Government, 2006 – 2007. (Completed)
- "Development of Water Level Prediction and Flood Warning System," Royal Thai Government, 2006 – 2007. (Completed)
- "Hand Sign Translator System," Faculty of Engineering, Chiang Mai University, 2005 – 2006. (Completed)
- "Development of an Algorithm and Program for Unexploded Ordnance Detection using Time Domain Analysis," Faculty of Engineering, Chiang Mai University, 2004 – 2005. (Completed)
- "Automatic Bone Marrow White Blood Cell Segmentation and Classification in Single-Cell Images," Thailand Research Fund, 2003 – 2005. (Completed)
- "Automatic Classification of White Blood Cells in Bone Marrow Images," Chiang Mai University, 2002 – 2003. (Completed)

ประสบการณ์ด้าน คอมพิวเตอร์	
	- **Super User**, SONY UNIX system (NeWS), the Electronic Circuits and Systems Research Laboratory, Chiang Mai University (March 1993 to December 1994) - **Supervisor**, Local Area Network (LAN), the Electronic Circuits and Systems Research Laboratory, Chiang Mai University (March 1993 to December 1994) - **Webmaster**, the Computational Intelligence Research Laboratory, University of Missouri-Columbia (1998 - 2001)

ภาษาคอมพิวเตอร์	
	C (9.5), PASCAL(8), ASSEMBLY (microprocessors (9), DSP (9), and microcontrollers (9)), MATLAB (9.5), UNIX Shells and System Programming (7), JAVA (8) Note: Numbers in parentheses indicate proficiency on a scale of 10

ระบบปฏิบัติการ	UNIX (9.2), DOS (9.5), MacIntosh (5), Windows (9.5), LAN (8)
	Note: Numbers in parentheses indicate proficiency on a scale of 10

กระบวนวิชาที่ศึกษา **ในระดับบัณฑิตศึกษา**	[ระหว่างการศึกษา ณ The University of Southern California และ The University of Missouri]

- Computer Networks
- Queuing Theory
- Random Processes
- Digital Signal Processing
- Optical Communications
- Communication Systems
- Communication Theory
- Advanced Digital Signal Processing Laboratory
- Error Correcting Code
- Pattern Recognition
- Digital Image Processing
- Neural Networks
- Computer Vision
- Digital Signal Processing in Telecommunications
- Fuzzy Systems
- Fractals and Chaos
- Multimedia Programming in Java
- Digital and Sample-Data System
- Advanced Digital Signal Processing