

CURRICULUM VITAE

Prof. Nipon Theera-Umpon, Ph.D., IEEE Senior Member

ศาสตราจารย์ ดร. นีพนธ์ ชีรอำพน

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Homepage: <http://ee.eng.cmu.ac.th/nipon>

EDUCATION

- **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)
- **B.Eng. (Hons.)** in Electrical Engineering, February 1993 Chiang Mai University, Chiang Mai, THAILAND (Jun 1989 - Feb 1993)

WORK EXPERIENCE

- **Director**
Biomedical Engineering Institute (formerly known as Biomedical Engineering Center), Chiang Mai University, THAILAND (October 2010 - Present)
- **Associate Dean of Engineering for Research and International Relations**
Faculty of Engineering, Chiang Mai University, THAILAND (March 2005 to March 2009)
- **Chairman**
 - Graduate Study in Biomedical Engineering, Chiang Mai University (March 2008 – October 2018)
 - Graduate Study in Electrical Engineering, Chiang Mai University (August 2004 - Jan 2007)
- **Faculty Member**
Department of Electrical Engineering, Chiang Mai University, THAILAND, from April 1993 to present (on leave to study in the U.S. from 1995 to 2000)
 - Professor (Nov 2018 to present)
 - Associate Professor (Feb 2006 to Nov 2018)
 - Assistant Professor (Feb 2003 – Feb 2006)
 - Lecturer (Apr 1993 – Feb 2003)

Teaching (Undergraduate Courses)

 - Engineering Stochastic Processes
 - Electromagnetic Fields and Waves I

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- 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 (Faculty of Associated Medical Sciences)
- Supervising senior projects of Electrical Engineering students

Teaching (Graduate Courses)

- 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 (Faculty of Associated Medical Sciences)
 - Biosignaling in Movement (Faculty of Associated Medical Sciences)
 - Analytical Chemistry and Clinical Laboratory Instrumentation (Faculty of Associated Medical Sciences)
 - Advanced Public Health Informatics (Faculty of Public Health)
- Supervising theses of Electrical Engineering graduate students, Computer Engineering graduate students, and Biomedical Engineering students.

- **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)

- **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
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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.)
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- **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**
 - **Advisor (2022–present), Vice President (2019–2022), Thai Health Technology Association**
 - **Vice President, Thai Engineering in Medicine and Biology Society**
 - **Honorary Member, Thai Association for Laboratory Animal Science**
 - **Committee Member, Chiang Mai University Research Ethic Committee**
 - **ECTI Technical Chair (Biomedical Engineering), Electrical Engineering/Electronics, Computer, Telecommunications, and Information Technology Association**
 - **Member (Electrical Engineer in Power and Communications) Council of Engineers, Thailand**
 - **Member, Engineering Institute of Thailand**
 - **Committee, Task Force on Smart City Development, Chiang Mai Province (2016-2019)**
 - **Member, Thai Robotics Society**
 - **Member, Biomedical Engineering Society of Thailand**
 - **External Committee Member (Academic Promotion)**
 - King Mongkut's University of Technology Thonburi
 - Prince of Songkhla University
 - Rajamangala University of Technology
 - Sirindhorn International Institute of Technology
 - Rangsit University
 - Walailak University
 - 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.
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- 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. Auephanwiriyaikul and S. Dhompongsa.)
 - **Vice Editor-in-Chief**
 - KIPS Transactions on Computer and Communication Systems (2018-).
 - KIPS Transactions on Software and Data Engineering (2018-).
 - **Associate Editor**
 - ECTI Transactions on Electrical Engineering, Electronics, and Communications (2010-).
 - **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*
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- 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) / International Conference on Computational Systems-Biology and Bioinformatics (CSBio 2020)*, 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,
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- 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*,
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- 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)
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- “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.
 - Biomedical Engineering International Conference (BMEiCON), 2011.
 - IEEE International Symposium on Biomedical Engineering (IEEE ISBME), December 2009.
 - International Symposium on Intelligent Signal Processing and Communication Systems, Bangkok, December 2008.
 - International Workshop on Advanced Image Technology 2007, Bangkok, January 2007.
 - International Conference on Intelligent Technologies 2003, Chiang Mai, December 2003.
 - **Program Committee Chair**
 - International Conference on Computer Engineering, Dubai, UAE, October 2015.
 - International Conference on Information and Convergence Technology for Smart Society, Bangkok, Thailand, January 2015.
 - International Symposium on Personalized Medicine, Cheongju, Korea, September 2013.
 - **Publication Chair**
 - Asia-Pacific Signal and Information Processing Association Annual Summit and Conference, Siem Reap, December 2014.
 - **Organizing Chair**
 - International Conference on Advanced Computational Intelligence, Chiang Mai, February 2016.
 - **International Cooperation Chair**
 - International Conference on Information, System and Convergence
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- **Local Arrangement Chair**
 - International Technical Conference on Circuits/Systems, Computers and Communications 2006, Chiang Mai, July 2006.
- **Associate Technical Chair**
 - International Symposium on Intelligent Signal Processing and Communication Systems, December 2011.
- **Steering Committee**
 - International Conference on Computer & Convergence Computing, Las Vegas, USA, 2016.
 - International Conference on Internet of Things and Convergence, Daejeon, Korea, 2015.
 - Electrical/Electronics, Computer, Telecommunications and Information Technology Conference, 2011-2013.
- **Organizing Committee**
 - International Conference on Intelligent Technologies 2003 (InTech'03), Chiang Mai, December 2003.
 - The 3rd Asian International Mobile Computing (AMOC-2004) Conference, Bangkok, May 2004.
- **Local Publicity**
 - International Conference on Power Control and Optimization 2008, Chiang Mai, July 2008.
- **Local Technical Committee**
 - 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.
- **Peer Committee to Review Research Grants for**

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- Qatar National Research Fund (QNRF)
 - 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
 - **Paper Reviewer for**
International
 - 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
 - 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
 - Artificial Intelligence in Medicine
 - 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
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- 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)

National

- 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)

HONORS AND ACTIVITIES

- **Royal Decoration**
 - Chakrabarti Mala Medal, 2020.
 - Knight Grand Cross (First Class) of the Most Exalted Order of the White Elephant, 2017.
 - Knight Grand Cross (First Class) of the Most Noble Order of the Crown of Thailand, 2013.
 - Knight Commander (Second Class) of the Most Exalted Order of the White Elephant, 2009.
 - Knight Commander (Second Class) of the Most Noble Order of the Crown of Thailand, 2005.
 - Commander (Third Class) of the Most Noble Order of the Crown of Thailand, 2002.
 - Companion (Fourth Class) of the Most Exalted Order of the White Elephant, 1998.
- **Outstanding Engineering Textbook Award 2022**, The Fund Management Committee for Education and Research in Engineering Under The Royal Patronage of His Royal Highness Crown Prince Maha Vajiralongkorn, **Engineering Institute of Thailand Under H.M. The**

King's Patronage, for the textbook "**Digital Signal and Image Processing: Theories and Applications**" by Nipon Theera-Umpon

- **Full scholarship recipient**, from the Royal Thai Government to pursue Master's and Ph.D. degrees in Electrical Engineering in the U.S. (December 1994 - May 2000)
- **Outstanding Alumni Award**, Chiang Mai University Alumni Association, 2023.
- **Golden Garuda Pin: National Outstanding Government Official Award**, The Royal Thai Government, 2015.
- **Gold Elephant Outstanding Researcher Award**, Chiang Mai University, 2013.
- **Outstanding Alumni Award**, Chiang Mai University Engineering Alumni Association, 2010.
- **Gold Elephant Outstanding Professor Award**, Chiang Mai University, 2008.
- **Appreciation Award** for endeavour and dedication, Society of Convergence and Integrated Research (SCIR), Korea, 2015.
- **2005 NRCT Excellent Dissertation Award**, *National Research Council of Thailand*, from the dissertation entitled "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.
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 - **Royal Golden Jubilee Grants-RGJ Ph.D. Program**, Thailand Research Fund (TRF), 2008.
 - **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.
 - **Academic Achievement Medal**, Faculty of Engineering, Chiang Mai University, 1990.
 - **Student Body President Elect**, Khonkaen Wittayayon school, THAILAND, 1988
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- **Invention Patent No. 91016** "Moisture and dielectric measurement system using electric capacitance measurement technique" by Nipon Theera-Umpon, Sanong Amaroek, Wirot Ponglangka, Sansanee Auephanwiriyaikul (Date of filing: April 7, 2010; Granted on January 17, 2023)
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 - Kasemsak Uthaichana, Nattapong Swangmuang, **Nipon Theera-Umpon**, and Hideyuki Sawada "Application of Linear Classification based on Acoustic Frequency Response for Detecting Translucent Mangosteens," *Proceedings of the International Conference of the Thai Society of Agricultural Engineering*, pp. 996-1004, Chiang Mai, Thailand, 2012.
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 - Ukrit Marung, **Nipon Theera-Umpon**, and Sansanee Auephanwiriyaikul, "Visual Clustering Method Using Genetic Algorithm and Image Manipulation," *Proceedings of the IEEE International Symposium on Intelligent Signal Processing and Communication Systems*, 5 pg., Chiang Mai, Thailand, December 2011.
 - **Nipon Theera-Umpon**, Thadsanan Chantorn, Sansanee Auephanwiriyaikul and Anusorn Yodjaiphet, "Coil Defect Inspection in Pivot Arm Assembly," *Proceedings of the International Data Storage Technology Conference (DST-CON2011)*, pp. 5–8, Bangkok, Thailand, November 2011. **[Best Paper Award]**
 - Kittichai Wantanajittikul, **Nipon Theera-Umpon**, Sansanee Auephanwiriyaikul and T. Koanantakool, "Automatic Segmentation and Degree Identification in Burn Color Images," *Proceedings of the 2011 Biomedical Engineering International Conference*, pp. 169–173, Chiang Mai, Thailand, November 2011.
 - Hathaichanok Thavichai, Nattapong Swangmuang, Kasemsak Uthaichana, **Nipon Theera-Umpon**, H. Sawada and T. Pankasemsuk, "Acoustic Technology for Non-destructive Evaluation to Increase Export Value of Mangosteens," *Proceedings of the South East Asian Association for Institutional Research 2011 Conference*, pp. 75-79, Chiang Mai, Thailand, November 2011.
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 - Jittichat Tilawat, **Nipon Theera-Umpon**, and Sansanee Auephanwiriyaikul, "Automatic Detection of Electricity Pylons in Aerial Video Sequences," *Proceedings of the 2010 International Conference on Electronics and Information Engineering (ICEIE 2010)*, pp. V1-342–V1-346, Kyoto, Japan, August 2010.
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 - Wattanapong Suttapak, Sansanee Auephanwiriyaikul, and **Nipon Theera-Umpon**, "Incorporating SIFT with Hard C-Means Algorithm," *Proceedings of the International Conference on Computer and Automation Engineering (ICCAE 2010)*, pp. 437–441, Singapore, February 2010.
 - Thanatip Chankong, **Nipon Theera-Umpon**, and Sansanee Auephanwiriyaikul, "Cervical Cell Classification Using Segmented-Nucleus Features," *Proceedings of the IEEE International Symposium on Biomedical Engineering (IEEE-ISBME)*, 4 pg., Bangkok, Thailand, December 2009.
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 - Suraphon Chumklin, Sansanee Auephanwiriyaikul, and **Nipon Theera-Umpon**, "Microcalcification Detection in Mammograms Using Fuzzy Inference System with Automatic Membership Function Generation," *Proceedings of the IEEE International Symposium on Biomedical Engineering (IEEE-ISBME)*, 4 pg., Bangkok, Thailand, December 2009.
 - Sanong Amaroek and **Nipon Theera-Umpon**, "Relationship between Electrical Capacitance and Moisture Content of Dried Longan Aril," *International Conference on Innovations in Agricultural, Food and Renewable Energy Productions for Mankind*, pp. 47–50, Nakhon Ratchasima, Thailand, April 2009.
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 - Patison Palee, Sansanee Auephanwiriyaikul, and **Nipon Theera-Umpon**, "An Automated Panorama Image Construction for Dimension Inspection," *Proceedings of the International Data Storage Technology Conference (DST-CON2008)*, Bangkok, Thailand, April 2008. (Published in KKU Research Journal)
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 - **Nipon Theera-Umpon**, "Unexploded Ordnance Detection Using Region of Interest in Range Domain of Ground Penetrating Radar,"
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- **Nipon Theera-Umpon**, “White Blood Cell Segmentation and Classification in Microscopic Bone Marrow Images,” *Proceedings of the International Conference on Fuzzy Systems and Knowledge Discovery*, Changsha, Hunan, China, August 2005.
- Sansanee Auephanwiriyaikul, Siripen Attrapadung, Sutasinee Thovutikul and **Nipon Theera-Umpon**, “Breast Abnormality Detection in Mammograms Using Fuzzy Inference System,” *Proceedings of the 2005 IEEE International Conference on Fuzzy Systems*, pp. 155-160, Reno, Nevada, U.S.A., May 2005.
- **Nipon Theera-Umpon**, “Ionogram Enhancement Using Size-Contrast Filtering,” *Proceedings of 2004 International Symposium on Earth's Atmosphere*, Chiang Mai, Thailand, December 2004.
- **Nipon Theera-Umpon** and Sansanee Auephanwiriyaikul, “Unexploded Ordnance Detection by Measuring Object Symmetry via Linear Prediction,” *Proceedings of IEEE Region 10 Technical Conference (IEEE-TENCON)*, pp. 195–198, Chiang Mai, Thailand, November 2004.
- Udomsak Boonprasert and **Nipon Theera-Umpon**, “Development of an Ocean Model for Search and Rescue using Support Vector Regression for Black-Box System Identification,” *Proceedings of the 4th International Conference on Intelligent Technologies*, pp. 66–72, Chiang Mai, Thailand, December 2003.
- Sansanee Auephanwiriyaikul and **Nipon Theera-Umpon**, “Comparison of Linguistic and Regular Hard C-Means in Postoperative Patient Data,” *Proceedings of the 4th International Conference on Intelligent Technologies*, pp. 365–370, Chiang Mai, Thailand, December 2003.
- Sitthiporn Sakburanaphet and **Nipon Theera-Umpon**, “Blind Processing in Thai Phoneme Decomposition and Classification,” *Proceedings of the 10th Tri-University International Joint Seminar and Symposium*, Mie, Japan, October 2003.
- Udomsak Boonprasert, **Nipon Theera-Umpon**, and Chewasak Rakpenthai, “Support Vector Regression Based Adaptive Power System Stabilizer,” *Proceedings of the 2003 IEEE International Symposium on Circuits and Systems*, pp. III-371–III-374, Bangkok, Thailand, May 2003.
- **Nipon Theera-Umpon**, “Fractal Dimension Estimation using Modified Differential Box-Counting and Its Application to MSTAR Target Classification”, *Proceedings of the 2002 IEEE International Conference on Systems, Man, and Cybernetics*, pp. 537–541, Hammamet, Tunisia, October 2002.
- Songyot Ratsameewichai, **Nipon Theera-Umpon**, Jirasuk Vilasdechanon, Sermsak Uatrongjit, and Kiti Likit-Anurucks, “Thai Phoneme Segmentation using Dual-Band Energy Contour,” *Proceedings of the 2002 International Technical Conference on Circuits/Systems Computers and Communications*, pp. 110–112, Phuket, Thailand, July 2002.
- **Nipon Theera-Umpon**, Paul D. Gader, and Dominic K. Ho, “Region-Based Time-Domain Processing of Hand-Held GPR”, *Proceedings of UXO Countermine Forum*, New Orleans, Louisiana, U.S.A., April 2001.
- R. Joe Stanley, **Nipon Theera-Umpon**, Paul D. Gader, Satish Homanchi, and Dominic K. Ho, “Detecting Landmines using Weighted Density Distribution Function Features”, *Proceedings of the SPIE Conference on Signal Processing, Sensor Fusion, and Target Recognition X*, Vol. 4380, pp. 135–141, Orlando, Florida, U.S.A., April 2001.
- **Nipon Theera-Umpon** and Paul D. Gader, “Training Neural Networks to Count White Blood Cells via a Minimum Counting Error Objective Function”, *Proceedings of the 15th International Conference on Pattern Recognition*, pp. 299–302, Barcelona, Spain, September 2000.
- **Nipon Theera-Umpon** and Paul D. Gader, “White Blood Cell Counting in Bone Marrow Images Via Classification-Free Granulometric

Methods", *Proceedings of the SPIE Conference on Nonlinear Image Processing X*, Vol. 3646, pp. 260–269, San Jose, California, U.S.A., January 1999.

- **Nipon Theera-Umpon**, Mohamed A. Khabou, Paul D. Gader, James M. Keller, H. Shi and H. Li, "Detection and Classification of MSTAR Objects Via Morphological Shared-Weight Neural Networks", *Proceedings of the SPIE Conference on Algorithms for SAR Imagery V*, Vol. 3370, pp. 530–540, Orlando, Florida, U.S.A., April 1998.

National Conferences (in English)

- 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 Auephanwiriyaikul, 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 Pothachareon, 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.

RESEARCH EXPERTISE

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

RESEARCH GRANTS

- "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 Wireless Network, Co., Ltd., 2021- (Completed)
- "CMU Smart Weight Balance Device," National Research Council of Thailand, 2021- (Completed)
- "Creation of Wireless Basic Vital Sign Monitoring Device (CMUgency) and GPS Tracking Device (CM-GPS)," National Research Council of Thailand, 2021- (In Progress)
- "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 Qlean 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- (In Progress)

- “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)
- “Vision-based Closed-loop Control for Robot Navigation,” Defence Technology Institute, 2016-2020 (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)
- “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)

**RELEVANT
COMPUTER
EXPERIENCE**

- **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)

**PROGRAMMING
LANGUAGES**

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

**OPERATING
SYSTEMS**

UNIX (9.2), DOS (9.5), MacIntosh (5), Windows (9.5), LAN (8)

Note: Numbers in parentheses indicate proficiency on a scale of 10

**RELEVANT
GRADUATE
COURSEWORKS**

[Taken at The University of Southern California and 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
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- Advanced Digital Signal Processing
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