PERSONAL DATA

Name : DR. NAWANOL THEERA-AMPORNPUNT
Position : Assistant Professor
Email : nawanol.t@phuket.psu.ac.th
Phone : +66 7627 6499

PUBLICATIONS SUMMARY

8	11
International Journal	International. Proceedings

Total Publications: 19

EDUCATION

Ph.D. Degree	2017	Ph.D. in Computer Science, Purdue University
Bachelor Degree	2009	B.S. in Computer Science, Carnegie Mellon University

RESEARCH INTERESTS

Computer Vision

Image Recognition

Machine Learning

RESEARCH PROJECTS

Early Bread Mold Detection Through Microscopic Images
Automatic Thai Food Recognition

APPOINTMENT

Assistant Professor - 2021
Lecturer - 2017

INTERNATIONAL JOURNAL ARTICLES

N. Theera-Ampornpunt, P. Treepong, P. Jannu, and A. Sritongkul, "Sustainable Waste Management Through Deep Learning: A Knowledge Distillation Framework for Real-Time Garbage Classification," *Sustainability*, vol. 18, no. 13, Jun. 2026, Art. no. 6392, doi: 10.3390/su18136392. *https://www.mdpi.com/2071-1050/18/13/6392*

6/2026 *sustainable waste management, circular economy, recycling, garbage classification, knowledge distillation, Deep learning, convolutional neural network, edge deployment, machine vision*

N. Theera-Ampornpunt and P. Treepong, " Visual Food Ingredient Prediction Using Deep Learning with Direct F-Score Optimization," *Foods*, vol. 14, no. 24, Dec. 2025, Art. no. 4269, doi: 10.3390/foods14244269.

https://www.mdpi.com/2304-8158/14/24/4269

12/2025 *F-score optimization, loss function, Deep learning, food ingredient prediction, image classification, cost-sensitive learning*

N. Theera-Ampornpunt and P. Treepong, "KediNet: a hybrid deep learning architecture for Thai dessert recognition," IEEE Access, vol. 13, pp. 86935–86948, 2025, doi: 10.1109/ACCESS.2025.3569435.

https://ieeexplore.ieee.org/document/11002498

5/2025 *Deep learning, food recognition, image classification, dessert*

N. Theera-Ampornpunt and P. Treepong, "Thai Food Recognition using Deep Learning with Cyclical Learning Rates," *IEEE Access*, vol. 12, pp. 174204–174221, 2024, doi: 10.1109/ACCESS.2024.3503672.

https://ieeexplore.ieee.org/document/10759670

11/2024 *Deep learning, food dataset, food recognition, image classification, learning rate*

P. Treepong, N. Theera-Ampornpunt, “Early Bread Mold Detection Through Microscopic Images Using Convolutional Neural Network,” *Current Research in Food Science*, vol. 7, Aug. 2023, Art. no. 100574.

https://www.sciencedirect.com/science/article/pii/S2665927123001429

8/2023 *image classification, Microbiology, food safety, food computing*

N. Theera-Ampornpunt, P. Treepong, “Optimizing Hyperparameters for Thai Cuisine Recognition via Convolutional Neural Networks,” *Traitement du Signal*, vol. 40, no. 3, pp. 1187–1193, 2023.

https://iieta.org/download/file/fid/100033

6/2023 *food computing, Image Recognition, Object Recognition, Thai Food*

Chih-Hao Fang, Nawanol Theera-Ampornpunt, Michael A. Roth, Ananth Grama, and Somali Chaterji. "AIKYATAN: Mapping Distal Regulatory Elements using Convolutional Learning on GPU," *BMC Bioinformatics*, Volume 20, December 2019.

https://bmcbioinformatics.biomedcentral.com/articles/10.1186/s12859-019-3049-1

12/2019 *Enhancers, Epigenomics, Graphics processing units (GPU)*

Seong Gon Kim, Nawanol Theera-Ampornpunt, Chih-Hao Fang, Mrudul Harwani, Ananth Grama and Somali Chaterji. "Opening up the blackbox: an interpretable deep neural network-based classifier for cell-type specific enhancer predictions," *BMC Systems Biology*, Volume 10, Number 2, pp. 243–258, August 2016.

https://bmcsystbiol.biomedcentral.com/

8/2016 *Genomic enhancers, Enhancer prediction, Deep neural networks (DNNs), Histone modifications, ChIP-seq, Cis-regulatory modules (CRMs), Interpretability of blackbox models*

INTERNATIONAL PROCEEDINGS

Nawanol Theera-Ampornpunt, Shikhar Suryavansh, Sameer Manchanda, Rajesh Panta, Kaustubh Joshi, Mostafa Ammar, Mung Chiang, Saurabh Bagchi. "AppStreamer: Reducing Storage Requirements of Mobile Games

through Predictive Streaming," In *proceedings of the International Conference on Embedded Wireless Systems and Networks (EWSN) 2020*, Lyon, France, 17–19 February 2020.

https://dl.acm.org/doi/proceedings/10.5555/3400306

2/2020 *Mobile networks, Embedded System*

Kwankamon Dittakan, Nawanol Theera-Ampornpunt, and Pattaporn Boodliam. "Non-destructive Grading of Pattavia Pineapple using Texture Analysis," In *proceedings of the 21st International Symposium on Wireless Personal Multimedia Communications* (WPMC-2018), Chiang Rai, Thailand, 25–28 November 2018.

http://web2.mfu.ac.th/conferences/wpmc2018/

11/2018 *Pineapple Mining, Pineapple Grading, Image Mining, Image Analysis, Agriculture Informatics*

Kwankamon Dittakan and Nawanol Theera-Ampornpunt. "Pum-Riang Thai Silk Pattern Classification using Texture Analysis." In *proceedings of the 15th Pacific Rim International Conference on Artificial Intelligence* (PRICAI 2018), Nanjing, China, 28–31 August 2018.

http://cse.seu.edu.cn/pricai18/

8/2018 *Image mining, Texture analysis, Image processing*

Heng Zhang, Nawanol Theera-Ampornpunt, He Wang, Saurabh Bagchi, and Rajesh Panta. "Sense-Aid: A Framework for Enabling Network as a Service for Participatory Sensing," In *Middleware 2017*, Las Vegas, Nevada, USA, 11–15 December 2017.

http://2017.middleware-conference.org/

12/2017 *Network architectures, Network services, Network experimentation*

Kwankamon Dittakan, Nawanol Theera-Ampornpunt, Waraphon Witthayarat, Sararat Hinnoy, Supawit Klaiwan, and Thunyatorn Pratheep. "Banana Cultivar Classification using Scale Invariant Shape Analysis," In *proceedings of the 2nd International Conference on Information Technology* (InCIT 2017), Nakhon Pathom, Thailand, 2–3 November 2017.

https://incit2017.ict.mahidol.ac.th/

11/2017 *object recognition, banana cultivar, shape analysis*

Nawanol Theera-Ampornpunt, Tarun Mangla, Saurabh Bagchi, Rajesh Panta, Kaustubh Joshi, Mostafa Ammar, and Ellen Zegura. "Tango: Toward a More Reliable Mobile Streaming through Cooperation between Cellular Network and Mobile Devices," In *proceedings of the 35th Symposium on Reliable Distributed Systems* (SRDS 2016), Budapest, Hungary, 26–29 September 2016.

http://srds2016.inf.mit.bme.hu/

9/2016 *Multimedia streaming, cellular network, reliability*

Tarun Mangla, Nawanol Theera-Ampornpunt, Mostafa Ammar, Ellen Zegura , and Saurabh Bagchi. "Video Through a Crystal Ball: Effect of Bandwidth Prediction Quality on Adaptive Streaming in Mobile Environments," In *proceedings of the 8th ACM Workshop on Mobile Video* (MoVid 2016), Klagenfurt am Wörthersee, Austria, 10–13 May 2016.

https://mmsys2016.itec.aau.at/movid/

5/2016 *Multimedia streaming, Network performance analysis, Mobile networks*

Nawanol Theera-Ampornpunt, Seong Gon Kim, Asish Ghoshal, Saurabh Bagchi, Ananth Grama, and Somali Chaterji. "Fast Training on Large Genomics Data using Distributed Support Vector Machines," In *proceedings of the 8th International Conference on Communication Systems and Networks* (COMSNETS 2016), Bangalore, India, 5–9 January 2016.

https://www.comsnets.org/archive/2016/

1/2016 *machine learning, classifier training, computational genomics, computational cost, network cost*

Seong Gon Kim, Nawanol Theera-Ampornpunt, Ananth Grama, and Somali Chaterji. "Interpretable Deep Neural Networks for Enhancer Prediction," In *proceedings of the 2015 IEEE International Conference on BioInformation and BioMedicine* (BIBM 2015), Washington, DC, 9–12 November 2015.

https://cci.drexel.edu/ieeebibm/bibm2015/

11/2015 *Enhancer predictions, deep neural networks, histone modification signatures, DNN interpretability*

Nawanol Theera-Ampornpunt, Saurabh Bagchi, Kaustubh Joshi, and Rajesh Panta. "Using Big Data for More Dependability: A Cellular Network Tale," In *proceedings of 9th Workshop on Hot Topics in Dependable*

Systems (HotDep 2013), Farmington, Pennsylvania, 3 November 2013.

http://sigops.org/sosp/sosp13/hotdep.html

11/2013 *reliability, availability, serviceability*

Ignacio Laguna, Subrata Mitra, Fahad Arshad, Nawanol Theera-Ampornpunt, Zongyang Zhu, Saurabh Bagchi, Samuel Midkiff, Mike Kistler and Ahmed Gheith. **Automatic Problem Localization in Distributed Applications via Multi-dimensional Metric Profiling**. In *proceedings of the 32nd International Symposium on Reliable Distributed Systems* (SRDS 2013), Braga, Portugal, 30 September – 3 October 2013.

http://srds.di.uminho.pt/

9/2013 *debugging aids, tracing, diagnostics, performance metrics*

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COLLEGE OF COMPUTING
Prince of Songkla University Phuket Campus
80 M.1 Vichitsongkram Road Kathu, Phuket 83120
Email: coc@phuket.psu.ac.th
Website: computing.psu.ac.th