

Theerawit Wilaiprasitporn

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Education

Tokyo Institute of Technology **Tokyo, Japan**

D. Eng. in Mechanical and Environmental Informatics (Biomedical Eng.)

PhD Research Fellowship from Japan Society for the Promotion of Science (JSPS) *April 2017*
with 1.9 Millions of JPY for Research Grants (Selection Ratios: 21.9%).

Chulalongkorn University **Bangkok, Thailand**

B. Eng. in Electrical and Engineering

Junior Science Talent Project, NSTDA with 50,000 Baht Research Grants *April 2013*
Four International Proceedings with Travel Grants

Research Interests

Biomedical and Health Informatics, Bio-Signal Processing and Control (including Brain-Computer Interfaces or BCI)

On-Going Projects

Closed-Loop SSVEP-Based BCI for Continuous and Smooth Control *May 2018 – April 2020*

- 600,000 Baht Funding from Thailand Research Funding

The Development of A Smart Living System for Health and Welfare *Dec 2018 - Oct 2019*

- 6 Million Baht Funding from PTT Public Company Limited
- Smart Living Studio
- Database Creation for Affective Computing, Wearable Devices for Sleep, Brain-Computer Interfaces

Neurocognitive Disorders and Neural Computing *Jan 2019 – Present*

- 5 Million Baht Funding from The Siam Commercial Bank Public Company Limited
- Starting Collaborative Research Laboratory at Siriraj Medical Research Center
- Focusing on A Detection of Early Onset Dementia

Experience

Vidyasirimedhi Institute of Science and Technology **Rayong, Thailand**

Lecturer at School of Information Science and Technology (IST)

Co-PI at Bio-Inspired Robotics and Neural Engineering Lab

Aug 2017 - Present

Tokyo Institute of Technology **Tokyo, Japan**

Master Student/PhD Research Fellow/PostDoctoral Research Fellow

Oct 2013 - July 2017

- Developed BCI using visual stimulus increasing evoked potential from brain
- Developed BCI-based personal identification number (PIN) application using OpenBCI.
- Developed hybrid brain/blink computer interface using OpenBCI.
- Developed hybrid electrooculography (EOG)/Blink computer interface using OpenBCI.
- Proposed drowsiness detection technique using single channel electroencephalography (EEG).

NASA Ames Research Center

Visiting Scholar

California, USA

Sep 2016 - Nov 2016

- To engage in collaborative research on operator fatigue in driving studies at Fatigue Countermeasures Laboratory in the Human Systems Integration Division (focusing on EEG, EOG measurement)

Biostatistics and Informatics (BSI) Laboratory, BIOTEC

Visiting Scholar

Pathum Thani, Thailand

Sep 2016 - Nov 2016

- Feasibility study of using Restricted Boltzmann Machine (RBM) to search for SNP-SNP interaction

National Rehabilitation Center for Persons with Disabilities

Research Internship

Saitama, Japan

Sep 2014 - Nov 2014

- Developed hybrid P300/SSVEP BCI

Publication (since 2017)

- W. Ausawalaithong, A. Thirach, S. Marukatat and **T. Wilaiprasitporn**, "Automatic Lung Cancer Prediction from Chest X-ray Images Using the Deep Learning Approach," 2018 11th Biomedical Engineering International Conference (BMEiCON), Chiang Mai, 2018, pp. 1-5. doi: 10.1109/BMEiCON.2018.8609997
- N. Banluesombatkul, T. Rakthanmanon and **T. Wilaiprasitporn**, "Single Channel ECG for Obstructive Sleep Apnea Severity Detection Using a Deep Learning Approach," TENCON 2018 - 2018 IEEE Region 10 Conference, Jeju, Korea (South), 2018, pp. 2011-2016. doi: 10.1109/TENCON.2018.8650429
- P. Lakhan, A. Dittapron, N. Banluesombatkul and **T. Wilaiprasitporn**, "Deep Neural Networks with Weighted Averaged Overnight Airflow Features for Sleep Apnea-Hypopnea Severity Classification," TENCON 2018 - 2018 IEEE Region 10 Conference, Jeju, Korea (South), 2018, pp. 0441-0445. doi: 10.1109/TENCON.2018.8650491
- P. Cheng, P. Autthasan, B. Pijarana, E. Chuangsuwanich and **T. Wilaiprasitporn**, "Towards Asynchronous Motor Imagery-Based Brain-Computer Interfaces: a joint training scheme using deep learning," TENCON 2018 - 2018 IEEE Region 10 Conference, Jeju, Korea (South), 2018, pp. 1994-1998. doi: 10.1109/TENCON.2018.8650546
- Lakhan, P., Banluesombatkul, N., Changniam, V., Dhithijaiyratn, R., Thawornbut, I., Boonchieng, E., **Wilaiprasitporn, T.** (2018). EDOSE: Emotion Datasets from Open Source EEG with a Real-Time Bracelet Sensor. arXiv preprint arXiv:1810.04582 (revised version is under review on IEEE Sensor Journal).
- Dittapron, A., Banluesombatkul, N., Ketrat, S., Chuangsuwanich, E., **Wilaiprasitporn, T.** (2018). Universal joint feature extraction for p300 eeg classification using semi-supervised autoencoder. arXiv preprint arXiv:1808.06541 (revised version is under review on IEEE TCDS).
- Autthasan, P., Du, X., Leung, B., Banluesombatkul, N., Kögl, F., Tachatiemchan, T., ... **Wilaiprasitporn, T.** (2018). Predictive Model for SSVEP Magnitude Variation: Applications to Continuous Control in Brain-Computer Interfaces. arXiv preprint arXiv:1809.07356 (under revision).
- **Wilaiprasitporn, T.**, Dittapron, A., Matchaparn, K., Tongbuasirilai, T., Banluesombatkul, N., Chuangsuwanich, E. (2018). Affective eeg-based person identification using the deep learning approach. arXiv preprint arXiv:1807.03147 (revised version is under review on IEEE TCDS).

Research with Fatigue Counter Measures Lab @ NASA Ames

- L. Wong, Y. Kurikagawa PhD, N. Gowda, P. Cravalho PhD, **T. Wilaiprasitporn PhD**, J. Garcia PhD, E. E. Flynn-Evans PhD MPH, Supervision of a Self-driving Vehicle Unmasks Latent Sleepiness Relative to Manual Driving (Twenty-Fourth International Symposium on Shiftwork and Working Time 2019)
- L. Wong, Y. Kurikagawa PhD, N. Gowda, P. Cravalho PhD, **T. Wilaiprasitporn PhD**, J. Garcia PhD, E. E. Flynn-Evans PhD MPH, Sleepiness and Slow Rolling Eye Movements are Increased During Autonomous Versus Manual Driving (SLEEP 2019)