

JETSADA ARNIN

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Professional Summary

PhD student accredited Biomedical Engineer emphasizing Brain-Computer Interface with over 10-year experience in research and development of Biomedical Engineering systems in compliance with international manufacturing standard.

Skills

- Bio-Signal implementation for Neurorehabilitation
- Biomedical Engineering embedded application
- Software/algorithm design and development
- Wireless communication development
- Industrial design for Biomedical Engineering
- Signal generator equipment
- BCI recording hardware and software
- Transnational research and commercialization
- Project and innovative product management
- Skilled multi-tasker and positive attitude

Work History

Researcher, 01/2017 to Current

Biomedical Engineering – University of Strathclyde

- Pursuing a PhD with a scholarship from Royal Thai Government.

Lecturer, 10/2014 to Current

Biomedical Engineering, Faculty of Engineering - Mahidol University

- Instruct undergraduate students in Biomedical Engineering program of Design for Biomedical Engineering, Electric Circuit, Biomedical Thermodynamics, Intro to Biomedical Engineering, and Ethics.
- Manage R&D projects in a variety of fields including Brain-Computer Interface, Neuro-Rehabilitation, Biomedical Wireless Embedded Systems, and Industrialization.

Co-Founder, 08/2014 to Current

Finest Med Design Co., Ltd. - Bangkok

- Initiate and collaborate with engineers and project managers to achieve a novel Biomedical Engineering innovation based on world-class design standard.
- Manage numerous projects simultaneously within budgetary restrictions.
- Communicate with customers to meet design requirements for practical use.

Research Assistant, 04/2011 to 09/2014

Brain-Computer Interface Center - Mahidol University

- Skillful in Brain-Computer Interface, Bio-Signals Monitoring, Image Processing, Biomedical Embedded System, and Wireless Communication System.
- Designed assistive devices compatible with manufacturing design based on Neuro-Rehabilitation perspective.
- Carried out research in the use of wireless communication for Bio-Signal Application, Portable Embedded Devices, and Wireless Control and Monitoring Application.

Technician (Trainee), 03/2010 to 05/2010

Bravo Medical Tech Co., Ltd. - Bangkok

- Maintained medical equipment and providing technical information for customers.
- Competently utilized analytical and medical software for surgery and responsible for calibration.

Education

Doctor of Philosophy: Biomedical Engineering, 2020

University of Strathclyde - Glasgow, United Kingdom

Master of Engineering: Biomedical Engineering, 2013

Mahidol University - Nakhon Pathom, Thailand

- 3.69 GPA with full-tuition scholarship

Bachelor of Engineering: Biomedical Engineering, 2011

Mahidol University - Nakhon Pathom, Thailand

- 3.69 GPA (First-class honours) and recipient of faculty scholarship

Research Topics

Development of Brain Computer Interfacing Technologies for Neuromodulation (*PhD Dissertation*)

- Developed and optimized signal processing techniques for real-time Brain-Computer Interface (BCI).
- Implemented high-performance computing into BCI devices for high-speed processing.

Brain-Controlled Wheelchair for Practical Use (*Sub-Investigator*)

- Designed an assistive wheelchair using BCI technology for people with disability.
- Implemented related technology to enhance quality of life of disabled and elderly people.

Sleep Behavioral Analysis System (*Bachelor Dissertation*)

- Analyzed sleep stage and sleep apnea disease by reducing cost from commercial sleep evaluation.
- Developed a low-cost and portable module to detect human's fatigue for preventing from serious accidents.

EEG-Based Sleep Behavior Enhancement System (*Master Dissertation*)

- Advanced a real-time automatic stage 2 sleep detection and alarm system.
- Determined possible fastest time periods for beneficial naps relative to stage 2 sleep.
- Declined accidental risks originating in a lack of adequate sleep.

Design for Physical Activity Index and Monitoring in Energy Expenditure to Decrease Risks of Health Deterioration in Residents and Diabetes (*Co-Principal Investigator*)

- Developed an index of energy expenditure for physical activity in Thai context.
- Advanced a device measuring energy expenditure automatically for physical activity in daily life and recreation activity that can reduce risks of health deterioration in residents and diabetes patients.

Conferences and Publications

- "Evaluation of Different Signal Processing Methods in Time and Frequency Domain for Brain-Computer Interface Applications", EMBC 2018, USA
- "Development of Practical Functional Electrical Stimulation Cycling Systems based on an Electromyography Study of the Cybathlon 2016", European Journal of Translational Myology, 27(4).
- "Practical Functional Electrical Stimulation Cycling System for Patients with Paraplegia", IFESS 2016, France
- "Development of a Novel Classification and Calculation Algorithm for Physical Activity Monitoring and Its Application", APSIPA 2014, Cambodia
- "Hybrid EEG-EMG based Neurorehabilitation System for Stroke Patients", SDC i-CREATE 2013, Korea
- "Wireless-Based Portable EEG-EOG Monitoring for Real Time Drowsiness Detection", EMBC 2013, Japan
- "Brain-Computer Interface Based Assistive Robot Arm", ISMICT 2013, Japan
- "Portable Assistive Robot Arm for Persons with Disability", SDC i-CREATE 2012, Singapore
- "Hybrid EEG-EOG BCI System for Practical Machine Control", SDC i-CREATE 2011, Thailand
- "Wireless Sensor Network-Based Smart Room System for Healthcare Monitoring", IEEE-ROBIO 2011, Thailand
- "On the Verification of Power Nap Associated with Stage 2 Sleep and Its Application", WASET ICBE 2011, Italy
- "Music Effect Assessment via Integrated ECG and EEG Index", EECON 2010, Thailand

Accomplishments

- Winner Award of Abstract Competition (Engineering & Technology), Samaggi Samagom 2018, UK
- 1st Runner-Up of IEEE Brain Data Bank Challenge 2017, Glasgow, UK
- Invention Award - Good Level (Medical Sciences) 2016 from The National Research Council of Thailand.
- Best Thai BME Innovation Award 2015 from Thai Biomedical Engineering Research Association.
- Established the first spin-off company of the Biomedical Engineering students in Thailand.
- 1st Runner-Up of International Student Design Challenge, i-CREATE 2012, Singapore.
- Merit Award of International Student Design Challenge, i-CREATE 2011, Thailand.

Extra-Curricular Activities

- Team leader of Mahidol BCI LAB in Cybathlon 2016 (the World's First Cyborg Olympics)
- Production consultant of the Faculty International Relations and Public Affairs, 2015-2016
- Biomedical Engineering consultant of Team Precision Public Company Limited, 2013-2016
- Co-principal investigator of projects funded by Thai Health Promotion Foundation, 2012-2017

Affiliations

- Team Precision Public Company Limited
- The Anti-Drowsy Driving Fund, Ramathibodi Hospital Foundation
- Thai Health Promotion Foundation
- Electrical and Electronic Product Testing Center (PTEC)
- Thai Food and Drug Administration (Thai FDA)