Panayu Keelawat

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INTERESTS

Computer Vision and Machine Learning

EDUCATION

University of California, San Diego, USA — 2020 - Present
Master of Science, Computer Science
Expected Graduation in 2022

Chulalongkorn University, Thailand — 2015 - 2019
Bachelor of Engineering, Computer Engineering
First Class Honors (Rank: 5/115) — GPAX: 3.90/4.00

TECHNICAL SKILLS

C/C++, Python, Java, Prolog, PHP, JavaScript, HTML, CSS, SQL, NodeJS, Git, Flask, TensorFlow, Keras, Conda, Docker

WORK EXPERIENCE

Software Engineer (Graduate) — **Jun 2019 - May 2020**
Refinitiv — Thomson Reuters — Thailand

- Developed readable and maintainable code for a global-scale inter-bank foreign exchange system.
- Integrated post-trade deal tracker service with Thomson Reuters' existing modules to build a novel cloud-based FinTech solution.
- Worked as a team player based on agile methodology across diverse cultures.

Teaching Assistant — **Feb 2019 - May 2019**
Faculty of Engineering — Chulalongkorn University — Thailand

- Assisted Assoc. Prof. Atiwong Suchato in teaching 2110221 Computer Engineering Essentials.
- Prepared materials as well as graded several coursework items.
- Helped students with their in-class activities.

Research Intern — **May 2018 - Jul 2018**
Numao Laboratory — Osaka University — Japan

- Worked in a research lab with Prof. Masayuki Numao as my supervisor.
- Applied machine learning techniques, e.g. CNN and SVM, to recognize emotions from brainwave patterns.
- Was involved in some parts of signal processing using EEGLAB.

PUBLICATIONS

Subject-Independent Emotion Recognition During Music Listening Based on EEG Using Deep Convolutional Neural Networks
Panayu Keelawat, *Nattapong Thammasan, Boonserm Kijsirikul, Masayuki Numao*
IEEE International Colloquium on Signal Processing & Its Applications (CSPA), 2019

Spatiotemporal Emotion Recognition using Deep CNN Based on EEG during Music Listening
Panayu Keelawat, *Nattapong Thammasan, Masayuki Numao, Boonserm Kijsirikul*
arXiv preprint arXiv: 1910.09719

SELECTED PROJECTS

EEG-based Emotion Recognition During Music Listening

- Applied ML techniques to brainwaves retrieved from frontal lobe with a will to gain more insights from emotion recognition problem in EEG induced by music.
- Focused on subject-independent and subject-dependent emotion recognition regarding hemispheric differences by using CNN to obtain spatiotemporal inputs.

E-Commerce Customer Clustering

- A part of UCSD ECE 225A Probability & Statistics for Data Science.
- Constructed customer clusters using k-means clustering and RFM analysis based on silhouette score.
- Analyzed customer behaviors from obtained clusters.
- Link to write-up: *https://gpanayu.github.io/pdf/ECE225AProject.pdf*

Cloud Speech-to-Text Service Benchmarking for Companies in Thailand

- A part of CU 2110498 Cloud Computing Technologies.
- Compared English speech-to-text services among Amazon Transcribe, Microsoft Azure Cognitive Service and Google Cloud Speech API.
- Analyzed and reported results with respect to metrics, such as accuracy, execution time and pricing.
- Link to blog (in Thai): *https://medium.com/@chaluviengchai/speech-to-text-aws-transcribe-vs-google-cloud-speech-api-vs-microsoft-azure-cognitive-f854d4087fdb*

Vision-based Crowd Density Reporting System

- Combined ML and Internet-of-Things (IoT) to produce a real-time crowd density reporting application.
- Developed a mobile application compatible with both iOS and Android.
- Deployed and tested in cafeteria, Faculty of Engineering, Chulalongkorn University.
- Received 1st runner-up in national IoT competition.

CU Event Hub

- Gathered all events in Chulalongkorn University (CU) into one place.
- Led backend team which covered both development and deployment on cloud.

AWARDS AND HONORS

Best Presenter
CSPA 2019, Penang, Malaysia
Presented my research work on EEG-based emotion recognition during music listening at an international IEEE conference.

1st runner-up, IoT track, National Software Contest 2019
National Electronics and Computer Technology Center (NECTEC), Bangkok, Thailand
Integrated ML and sensor data to construct Vision-based Crowd Density Reporting System. Utilized CSRNet to perform the evaluation, and reported results via mobile application built with React Native.

1st runner-up, CU Toyota Ha:mo Open Innovation Contest 2019
Toyota Motor Thailand and Chulalongkorn University, Bangkok, Thailand
Created a PoC along with a development plan for ad-hoc network communication to promote safety and ECO driving as a part of electric vehicle. This contest was a collaborative project between Toyota and Chulalongkorn University.

2nd runner-up, AIROBIC 2018
Artificial Intelligence Association Of Thailand (AIAT), Bangkok, Thailand
Joined a hackathon held by AIAT. Created a sentiment-aware chatbot for personalized banking transactions using DialogFlow, Keras, Flask and ReactJS.

CU Savings Coop Scholarship, 2016 - 2019
Chulalongkorn University Savings Cooperative Ltd., Bangkok, Thailand
Received scholarship according to outstanding academic performance in every year.

CERTIFICATION

Deep Learning Specialization
By deeplearning.ai on Coursera
Certificate link: *https://www.coursera.org/account/accomplishments/specialization/certificate/HHLPGUG6T83V*