

PATARA TRIRAT

Ph.D Student

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RESEARCH INTERESTS

Data Mining and Analysis, Automated Machine Learning (AutoML),
Intelligent Learning Systems, Continual Learning, Web Development

EDUCATION

AUGUST 2020 — PRESENT / DAEJEON, SOUTH KOREA

KAIST

Ph.D in School of Computing, GPA: 4.12 / 4.30

Advisor: Prof. Jae-Gil Lee

Undergraduate Student Research Mentoring:

- + Mr. Phatarapran Saraluck
- + Mr. Wirittipol Supdateyarnnakorn

AUGUST 2018 — AUGUST 2020 / DAEJEON, SOUTH KOREA

KAIST

M.S. in Knowledge Service Engineering, GPA: 3.80 / 4.30

Thesis: Analysis of Dangerous Driving Behavior from Driving Log Data for
Traffic Accident Risk Prediction

Advisor: Prof. Jae-Gil Lee

Additional Activity:

- + **Student Assistant Photographer:** International Scholar & Student
Services (ISSS)
- + **Club Member:** Lunatic Street Dance Club

JUNE 2012 - MAY 2016 / BANGKOK, THAILAND

Kasetsart University

B.S. in Computer Science with First Class Honors, GPA: 3.74 / 4.00

Advisor: Prof. Pakaket Wattuya

Additional Activity:

- + **Web Developer** (Co-operative Education): NewKru Co., Ltd. (Supervisor:
Prof. Sukumal Kitisin and Prof. Usa Sammapun)
- + **Teaching Assistant:** Web Technology and Web Services (CS443)
- + **Dance Instructor / Club Member:** KU Dance Club

EMPLOYMENT

AUGUST 2018 — PRESENT / DAEJEON, SOUTH KOREA

Research Assistant at [Data Mining Lab, KAIST](#)

*Spatial-Temporal Data Mining and Analysis, Deep Learning Research, Automated
Machine Learning for Time Series and Data Stream*

MAY 2017 — AUGUST 2018 / BANGKOK, THAILAND

Frontend Developer at [Sobtid Edutainment Co., Ltd.](#)

*Built APIs and developed web applications under sobtid.me project (both services
for customers and in-house officers) using Node.js on Amazon's AWS and the web
application using React.js with Google's Firebase*

NOVEMBER 2016 — FEBRUARY 2017 / BANGKOK, THAILAND

Intern at [Korean Cultural Center](#)

*Advertisement Design, Document Translation, Event Organization Assistance, and
Public Relations*

JUNE 2015 — NOVEMBER 2015 / BANGKOK, THAILAND

Web Developer at [NewKru Co., Ltd.](#)

Researched on MOOC platforms and developed a new MOOC application

PUBLICATIONS

Work In Progress

- + Trirat, P.^{*}, Kim, Y.^{*}, Hwang, S.J., Yun, S.Y., and Lee, J.
E3M: An Evolvable Memory Management Mechanism for Online Task-free Continual Learning
A Conference Paper
- + Trirat, P. and Lee, J.
Delight: Neural Architecture Search for Data Stream Mining with Lightweight Multi-Level Adaptation
A Conference Paper
- + Trirat, P. and Lee, J.
TimeZone: Neural Architecture Search for Time Series Representation Learning with Task-Aware Zero-Cost Proxy
A Conference Paper
- + Nam, Y., Trirat, P., Kim, T., Lee, Y. S., and Lee, J.
Time-CAD: Time-Series Anomaly Detection with Context-Aware Decomposition
A Conference Paper

Under Review

- + Trirat, P. and Lee, J.
PASTA: Neural Architecture Search for Time Series Anomaly Detection with Temporal Connectivity Encoding
ICML 2023
- + Trirat, P., Yoon, S., and Lee, J.,
MG-TAR: Multi-view Graph Convolutional Networks for Traffic Accident Risk Prediction
IEEE Transactions on Intelligent Transportation Systems

Conference Proceedings

- + Trirat, P.^{*}, Nam, Y.^{*}, Kim, T., and Lee, J.
AnoViz: A Visual Inspection Tool of Anomalies in Multivariate Time Series
AAAI 2023 (Top Conference, Demonstration Paper)
- + Trirat, P., Shin, Y., Kim, S., and Kim, M.
Generating a Machine Learning Model with a Few Sentences
KIISE, KSC 2021 (Poster Paper)
- + Trirat, P. and Lee, J.
DF-TAR: A Deep Fusion Network for Citywide Traffic Accident Risk Prediction with Dangerous Driving Behavior
TheWebConf 2021 (Top Conference, Acceptance Rate: 20.6%)
- + Trirat, P., Noree, S., and Yi, M.Y.
IntelliMOOC: Intelligent Online Learning Framework for MOOC Platforms
EDM 2020 (Poster Paper)
- + Trirat, P., Kim, M., and Lee, J.
Experimental Analysis of the Effect of Autoencoder Architectures on Time Series Representation Learning
KIISE, KCC 2020 (Poster Paper)
- + Shin, Y., Yoon, S., Trirat, P., and Lee, J.
CEP-Wizard: Automatic Deployment of Distributed Complex Event Processing
IEEE ICDE 2019 (Top Conference, Demonstration Paper)

Journal Articles

- + Trirat, P., Yoon, S., and Lee, J.,
Spatial and Temporal Analysis of Dangerous Driving Behavior Using DTG Data
Korea Database Research 2019 (Vol. 35 No. 3)
- + Trirat, P., Yoon, S., and Lee, J.,
Study on Driving Behavior of Different Vehicle Types Using DTG Data
Korea Database Research 2019 (Vol. 35 No. 2)

— LANGUAGES AND SKILLS

Languages

Thai: Native

English: Effective Operational Proficiency (**TOEIC:** 975 / 990)

Korean: Limited Working Proficiency (**TOPIK IBT:** 6 / 6, **TOPIK:** 5 / 6, **TOPIK Speaking:** 3 / 6)

Programming Languages

Python, JavaScript, HTML/CSS, R, Java

Frameworks / Libraries

Tensorflow, Keras, React.js, Node.js, PyTorch

Cloud Services

Google Cloud Platform, Amazon Web Services, Microsoft Azure

Softwares

Microsoft Offices, Apple iWork, Adobe Photoshop, Apple Final Cut Pro

— ACCOMPLISHMENTS

Awards

- + 2022 외국인 유학생 독도사랑 한국어 말하기대회 최우수상 (팀명: K-GOOSE)
- + 2020-24 KAIST Scholarship (Doctoral Program)
- + 2019 3rd Place at *Year End Party Talent Show* by KAIST ISSS
- + 2018-20 KAIST Scholarship (Master Program)
- + 2017 Winner at *Thailand Hip Hop Dance Championship* Megacrew Division by Hip Hop International Thailand
- + 2016 Winner *LINE Finance Night Dance Competition* by LINE Finance
- + 2014-16 *Faculty of Science Awards* for Outstanding Academic Achievement Student by Faculty of Science, Kasetsart University
- + 2013-15 *Medal of Excellent Academic Achievement* by Kasetsart University
- + 2013-15 *5As Scholarship* by Department of Computer Science
- + 2012-14 *Tuition fee Exemption* (5As+ per semester) by Kasetsart University
- + 2012 *King Rama IX's Royal Awards* (Qualified Grantee of Big Vocational College) by Ministry of Education
- + 2011 3rd Runner Up at *MOS Olympics Competition Thailand* by ARiT
- + 2011 Winner H.R.H Princess Soamsawali Trophy at *SIAM MOS Competition* by ARiT

Certificates

- + 2019.07 Certificate of Completion (*Introduction to Data Science*) by Skooldio
- + 2019.04 Certificate of Completion (*2019 Spring Mentor Program*) by KAIST ISSS
- + 2018.03 *Mobile Sites Certification* by Google
- + 2018.03 Certificate of Completion (*Modern React with Redux*) by Udemy

- + 2017.08 Certificate of Completion (*React Js and Redux Mastering Web Apps*) by Udemy
- + 2017.05 Certificate of Training (*Mr.Wiggles Hip Hop Camp*) by Studio Zoom
- + 2016.08 Certificate of Achievement (*K-Singing Class*) by Korean Cultural Center
- + 2016.04 *Test of Practical Competency in ICT* (TOPCIT — Score: 297, Level: 2) by IITP and KPC
- + 2015.12 Certificate of Completion (**제1기 한국유학대비 한국어과정: 중급**) by Korean Education Center
- + 2014.05 Certificate of Participation (*Thailand K-POP Camp for Young Talents*) by Korean Cultural Center and Silpakorn University
- + 2014.01 Certificate of Completion (*5th Master Class*) by Move With Passion
- + 2013.10 Certificate of Honor (*Super Start Summer Camp*) by Monkey Town Academy
- + 2013.08 Certificate of Participation (*ACM-ICPC Thailand Central Group A Programming Contest 2013*) by ACM-ICPC
- + 2013.03 Certificate of Training (*1st Software Developing Skills Training Camp*) by Department of Computer Science
- + 2012.10 Certificate of Training (*1st Programming Skills for Problem-solving Training Camp*) by Depart of Computer Science

Major Course Projects at KAIST

- + Q&AI: AI-Infused Q&A System for Online Learning (CS492 (J): Special Topics in Computer Science<AI for Smart Life>)
- + Towards Better Understanding of Cryptocurrency: A Multi-Aspect Analysis (CS564: Data Science Methodology)
- + Neural Predictor for Neural Architecture Search in Tensorflow 2.0 (CS470: Introduction to Artificial Intelligence)
- + Mr.TAD: Time Series Anomaly Detection with Multi-resolution Ensemble Learning (CS570: Artificial Intelligence and Machine Learning)
- + Conversational AutoML: A Framework for Generating an Efficient Machine Learning Model with a Few Sentences (CS579: Computational Linguistics)
- + HandyBoard: An Adjustable Split of Soft Keyboard in Landscape Mode Smartphone Touch Screens (CS584: Human-Computer Interaction)
- + Jet Presentation: A Presentation Rehearsal Partner for Everyone (KSE624: Mobile and Pervasive Computing for Knowledge Services)
- + TRepNet: Convolutional Denoising Autoencoder for Time Series Representation Learning (KSE801: Data Analysis based on Deep Learning)
- + Answering Question in Massive Open Online Course by Recommending Ranked Video Clips (KSE643: Knowledge Engineering and Intelligent Decision Making)

Previous Projects

- + Korean Square Web Application (React.js)
- + D Maniac Studio Mobile Application (React Native)
- + D Maniac Studio Web Application (React.js)
- + Sneakavilla Online Store (Wordpress)
- + Kyouei Co., Ltd. Website (Wordpress)
- + Sriracha Tugboat Co., Ltd. Website (Wordpress)
- + Web Application UX/UI Design (Human-Computer Interaction Assignment and Project using AngularJs)
- + Robotz Language and Compiler (Formal Language & Automata Theory Project using Java)

- + Hook Flash Card E-Learning Web Application (Web Technology and Web Service Project#2 using CakePHP)
- + Workpoint Web-based Resource Management (Web Technology and Web Service Project#1 using PHP)
- + Floral Bloom (ERP Project using SAP B1)
- + Flower Bloom Online Store (Ruby on Rails on IBM Bluemix)
- + Adventure in Wonderland (Software Engineering Game Project using Java)
- + Hangman Game (Network Application Project using Python with Tk GUI)
- + Index Sequential Search (Data Structure Project using Adobe Flash Animation)
- + Fan Store (Software Construction Project using Java)
- + Electricity Cost Prediction Program (DevCamp#1 Windows 8 Application Project using C#)
- + Hangman CLI Game (AlgoCamp#1 using Python)
- + Polynomial Calculation (Computer Programming Project using Python)
- + Store Project (Computer Programming Project using Python)

On-stage Performances

- + 2022 Lunatic - Spring 오픈동방 Battle (Top 4)
- + 2019 Lunatic - Spring PPOP Battle (Top 8)
- + 2019 Lunatic - Open Battle (Prelims)
- + 2019 Lunatic - 기획부장배 Battle (Top 8)
- + 2019 Lunatic - Spring 오픈동방 Battle (Guest Show)
- + 2018 Lunatic - Fall Freshmen Battle (Top 8)
- + 2018 Lunatic - Fall Illusion x Lunatic Battle (Top 8)
- + 2018 Lunatic - Fall Performance
- + 2017 D Maniac Megacrew - Hip Hop International Thailand (Winner)
- + 2017 D Maniqueen - Hip Hop International Thailand (Ranked 12th)
- + 2016 D Maniqueen - LINE Finance Night Dance Competition (Winner)
- + 2016 D Maniqueen - Hip Hop International Thailand (Ranked 6th)
- + 2016-18 KU Dance Club - Kaset Fair Annual Festival
- + 2016 KU Dance Club - Kasetsart University Orientation Day
- + 2015 D Maniqueen - Seacon Street Int'l Challenge (Ranked 6th)
- + 2015 D Maniqueen - To Be Number One Variety Showcase (NBT Channel)
- + 2015 TomYumKoong - Hip Hop International Thailand (Ranked 4th)
- + 2015-16 KU Dance Club - KU Firstdate
- + 2015-16 KU Dance Club - Freshy Night
- + 2014-16 KU Dance Club - Open Activity World Event
- + 2015-16 KU Dance Club - Royal Project Foundation Annual Event at Central World

— OTHER INTERESTS

Art and Sport

Performing Arts, Acting, Dancing, Singing, Table Tennis, Running, Basketball

Music

K-Ballad, K-Pop, Rap/Hip-Hop, R&B, Soundtracks

Lifestyles

Photography, Dramas/Movies, Mainstream Social Medias