

# PATARA TRIRAT

Ph.D. Student

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**Affiliation:** Data Mining Lab, School of Computing,  
Korea Advanced Institute of Science and Technology (KAIST)  
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## RESEARCH INTERESTS

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

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## EDUCATION

AUGUST 2020 — PRESENT / DAEJEON, SOUTH KOREA  
**KAIST**

*Ph.D in School of Computing, GPA: 4.15 / 4.30*

**Advisor:** Prof. Jae-Gil Lee

**Undergraduate Student Research Mentoring:**

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

**Academic Services:**

- + **Journal Reviewer:** IEEE T-ITS, IEEE TNNLS

AUGUST 2018 — AUGUST 2020 / DAEJEON, SOUTH KOREA  
**KAIST**

*M.S. in Knowledge Service Engineering (Currently, Data Science), 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

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## 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

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## PUBLICATIONS

### Under Review

- + Trirat, P. and Lee, J.  
*PASTA*: Neural Architecture Search for Time Series Anomaly Detection with Temporal Connectivity Encoding  
**ICML 2023**

### 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.,  
MG-TAR: Multi-view Graph Convolutional Networks for Traffic Accident Risk Prediction  
**IEEE Transactions on Intelligent Transportation Systems** (SCIE, IF: 9.551)
- + 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)

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## LANGUAGES AND SKILLS

### Languages

**Thai:** Native  
**English:** Effective Operational Proficiency  
> **TOEIC:** 975 / 990  
**Korean:** Limited Working Proficiency  
> **TOPIK IBT:** 6 / 6  
> **TOPIK:** 5 / 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

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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**

- + 2022.08 Letter of Appointment (Member of Dokdo Supporters) by Dokdo Foundation
- + 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**

- + A3M: Adaptive Memory Management Mechanism for Online Task-free Continual Learning (AI602: Advanced Deep Learning)
- + 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**

- + 2022.11 Lunatic - Funk Night Vol.4 Tier Battle (Top 2 / Finalist)
- + 2022.07 1MDJ Showcase - Best Dancer
- + 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