NONTAWAT CHAROENPHAKDEE

Ph.D. Student, Department of Computer Science, The University of Tokyo

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Education

Ph.D. Student in Computer Science, The University of Tokyo **Sep 2018 - Present**

Supervisor	Masashi Sugiyama
Laboratory website	http://www.ms.k.u-tokyo.ac.jp/
GPAX	4.00 / 4.00

Master of Information Science and Technology, The University of Tokyo **Sep 2016 - Sep 2018**

Supervisor	Masashi Sugiyama
GPAX	4.00 / 4.00

Bachelor of Computer Engineering, Chulalongkorn University **Jun 2011 - Jun 2015**

GPAX	3.80 / 4.00 (First class honors)

Research Interests

Loss function, Evaluation metric, Weakly supervised learning, Learning with reject option, Domain adaptation, Anomaly detection, Speech signal processing, Healthcare data analysis, Natural language processing.

Job Experiences

Research Assistant, RIKEN Center for Advanced Intelligence Project, (Tokyo, Japan) **Jan 2019 - Present**

- Researching on weakly supervised learning in the imperfect information learning team.

Part-time Software Developer, HENNGE, (Tokyo, Japan) **Jun 2016 - Dec 2018**

- Researched and developed a machine learning system for solving the bipartite ranking task.
- Optimized the memory/time complexity for searching in mail archiving system.

Software Developer, CODIUM Company Limited, (Bangkok, Thailand) **Feb 2015 - Feb 2016**

- Developed a web application for customer relationship management using django web framework.
- Developed a cloud monitoring system using Tornado, RethinkDB and django.

Internship Experiences

Research Intern, Preferred Networks, (Tokyo, Japan) **Aug 2019 - Sep 2019**

- Research topic: Open-set few-shot speaker identification from speech signal data
- Research blog: https://tech.preferred.jp/en/blog/open-set-few-shot-speaker-identification/

Research Intern, Computer Science, Chulalongkorn University, (Bangkok, Thailand) **Feb 2019 - Mar 2019**

- Research topic: Learning only from relevant keywords and unlabeled documents.
- Result: A conference paper published in EMNLP-IJCNLP 2019.

Research Intern, R&D Team of NTT Data Corporation, (Tokyo, Japan) **Jan 2015 - Feb 2015**

- Developed and tested a telepresence iOS application using telerobotics technology.
- Attended workshop on big data innovation and demand-side management at Keio University

iOS Developer, CODIUM Company Limited, (Bangkok, Thailand) **Jul 2014 - Sep 2014**

- Developed an iPad enterprise application for the Japanese car maintenance company using Objective-C and conducted requirement gathering and analysis.

Research Student, JAIST, (Ishikawa, Japan) **Mar 2014 - May 2014**

- Researched on fundamental frequency estimation of reverberant speech using multivariate empirical mode decomposition (MEMD) and autocorrelation of the log spectrum (ACLOS) under supervision of Professor Masashi Unoki

Skills

Programming languages (most to least proficient):	Python, MATLAB, Java, C++
Tools & Frameworks:	Amazon AWS, PostgreSQL, MongoDB, Chainer, PyTorch, django

Professional Activities

Journal Reviewer:	Machine Learning, Neural Networks, Springer Nature Computer Science
Conference Reviewer:	ICLR 2020, ICML 2020 (Top 33%), ACML 2020, NeurIPS 2020 (Top 10%), CVPR 2021 (Outstanding Reviewer), ICML 2021 Expert Reviewer, ACML 2021, NeurIPS 2021
Workshop Reviewer:	IJCAI WSRL 2021
Student Volunteer:	ACML 2020

Awards and Honors

- **Google PhD Fellowship Recipient 2020 in Machine learning**: A fellowship program provided by Google to recognize and support outstanding graduate students doing research in areas relevant to computer science and related fields. Link: https://research.google/outreach/phd-fellowship/recipients/.
- **Selected as a participant of the Global Young Scientists Summit 2020**: GYSS is an international gathering of young researchers from all over the world in Singapore, who will be mentored by Nobel Laureates, Fields Medalists, Millennium Technology Prize winners, and Turing Award winners over a four-day summit. I also gave a poster presentation of my master's thesis "Machine learning from Noisy Labels: An Approach Based on Symmetric Losses".
- **AIP Challenge Program**: Awarded a research funding for young researchers provided by Japan Science and Technology Agency (JST): 1,000,000 JPY.
- **Top 1% in Shopee Code League Competition on Product Detection**: Ranked 4/646 in product category classification challenge. Data are images in Shopee.com (the leading online shopping platform in Southeast Asia) which may also contain texts in ASEAN languages. Teamed up with Nuttapong Chairatanakul, Pannavat Terdchanakul, and Zhenghang Cui. Competition Link: https://www.kaggle.com/c/shopee-product-detection-open/leaderboard.
- **Winner of Thailand NLP Hackathon 2/2020**: Ranked first place in Thailand online hackathon 2/2020 for the natural language processing task. Teamed up with Noppayut Sriwatanasakdi and Nuttapong Chairatanakul. This competition was organized by the Artificial Intelligence Association of Thailand (AIAT). Prize: 20,000 THB. Link: https://bit.ly/3t2NcLn. Also featured in Ep. 14 of the program "AI Lives" by AIAT (in Thai language): https://bit.ly/2O9y0Nx.
- **Representative Student**: Selected as the only one student from all master's students in the faculty of information science and technology (IST), the University of Tokyo, in September 2018. The decision was based on academic achievements and the master's thesis. Awarded free academic gown rental and an honor to be the representative student of IST to receive my master's degree certificate directly from the president of the University of Tokyo, Makoto Gonokami.
- **Monbukagakusho (MEXT) Scholarship**: A scholarship granted by the Japanese government for studying both master's and doctor's degrees at the University of Tokyo. The scholarship covers flight tickets, tuition fees, and monthly allowance.
- **Featured in Ep. 3 of Thai in AI (ThAI)**: It was my honor to be interviewed by Krikamol Muandet in ThAI, which is a program aims at connecting Thai scholars working in artificial intelligence (AI) across the globe with the purpose of creating, strengthening, and maintaining international collaboration among them as well as cultivating a new generation of Thai scholars. Youtube (in Thai language): https://www.youtube.com/watch?v=zMKZSCi6kWg
- **NeurIPS 2019 Travel Award**: Awarded financial support for attending 33rd Conference on Neural Information Processing System in Vancouver, Canada: 7 nights of a hotel stay.
- **ICML 2019 Travel Award**: Awarded financial support for attending the 36th International Conference on Machine Learning in Long Beach, California, United States: 1,700 USD.
- **First Class Honors**: Bachelor of Engineering, Chulalongkorn University.

Publications

Conference Proceedings

[C1] **Nontawat Charoenphakdee**, Zhenghang Cui, Yivan Zhang, and Masashi Sugiyama. "Classification with Rejection Based on Cost-sensitive Classification". In: ***ICML***. 2021. (to appear).

[C2] **Nontawat Charoenphakdee***, Jayakorn Vongkulbhisal*, Nuttapong Chairatanakul, and Masashi Sugiyama. "On Focal Loss for Class-Posterior Probability Estimation: A Theoretical Perspective". In: ***CVPR***. 2021. (to appear, *equal contribution).

[C3] Voot Tangkaratt, **Nontawat Charoenphakdee**, and Masashi Sugiyama. "Robust Imitation Learning from Noisy Demonstrations". In: ***AISTATS***. 2021.

[C4] Yivan Zhang, **Nontawat Charoenphakdee**, Zhenguo Wu, and Masashi Sugiyama. "Learning from Aggregate Observations". In: ***NeurIPS***. 2020.

[C5] **Nontawat Charoenphakdee**, Jongyeong Lee, Yiping Jin, Dittaya Wanvarie, and Masashi Sugiyama. "Learning Only from Relevant Keywords and Unlabeled Documents". In: ***EMNLP-IJCNLP***. 2019.

[C6] **Nontawat Charoenphakdee**, Jongyeong Lee, and Masashi Sugiyama. "On Symmetric Losses for Learning from Corrupted Labels". In: ***ICML***. 2019.

[C7] **Nontawat Charoenphakdee** and Masashi Sugiyama. “Positive-Unlabeled Classification under Class Prior Shift and Asymmetric Error”. In: ***SDM***. 2019.

[C8] Seiichi Kuroki, **Nontawat Charoenphakdee**, Han Bao, Junya Honda, Issei Sato, and Masashi Sugiyama. “Unsupervised Domain Adaptation Based on Source-guided Discrepancy”. In: ***AAAI***. 2019.

[C9] Chenri Ni, **Nontawat Charoenphakdee**, Junya Honda, and Masashi Sugiyama. “On the Calibration of Multiclass Classification with Rejection”. In: ***NeurIPS***. 2019.

[C10] Yueh-Hua Wu, **Nontawat Charoenphakdee**, Han Bao, Voot Tangkaratt, and Masashi Sugiyama. “Imitation Learning from Imperfect Demonstration”. In: ***ICML***. 2019.

Journal Articles

[J1] Taira Tsuchiya, **Nontawat Charoenphakdee**, Issei Sato, and Masashi Sugiyama. “Semi-Supervised Ordinal Regression Based on Empirical Risk Minimization”. In: ***Neural Computation*** (2021). (to appear).

[J2] Zhenghang Cui, **Nontawat Charoenphakdee**, Issei Sato, and Masashi Sugiyama. “Classification from Triplet Comparison Data”. In: ***Neural Computation*** (2020).

Preprints

[P1] **Nontawat Charoenphakdee**, Jongyeong Lee, and Masashi Sugiyama. *A Symmetric Loss Perspective of Reliable Machine Learning*. arXiv preprint arXiv:2101.01366, An invited article preprint for **the Fields Institute Communications Series on Data Science and Optimization**. 2021.

[P2] Hideaki Imamura, **Nontawat Charoenphakdee**, Futoshi Futami, Issei Sato, Junya Honda, and Masashi Sugiyama. *Time-varying Gaussian Process Bandit Optimization with Non-constant Evaluation Time*. arXiv preprint arXiv:2003.04691. 2020.

[P3] Jongyeong Lee, **Nontawat Charoenphakdee**, Seiichi Kuroki, and Masashi Sugiyama. *Domain Discrepancy Measure for Complex Models in Unsupervised Domain Adaptation*. arXiv preprint arXiv:1901.10654, Presented at **SNL2019 Workshop**. 2019.

[P4] Yivan Zhang, **Nontawat Charoenphakdee**, and Masashi Sugiyama. *Learning from Indirect Observations*. arXiv preprint arXiv:1910.04394. 2019.

Projects Experiences

- **Mobile Application for Automatic Popular Music Composition from Singing Voice (Bachelor’s thesis)**: Developed an android application for composing a song automatically from singing voice using signal processing algorithms for the noise suppression, voice segmentation and pitch detection modules. We also used machine learning technology for the bar detection, accompaniment generation, and chord progression generation modules. Featured in Chulalongkorn University’s Program "Chang Kid Chang Thum". Youtube (in Thai language): `https://www.youtube.com/watch?v=5ESBWRDs0y0`. Poster: `https://goo.gl/eAwhNb`.
- **Beergame: Bullwhip effect phenomenon simulation (freelance project: 2013)** Developed a Java application for studying the behavior of the bullwhip effect in the supply chain. Beergame was originated from the project Massachusetts Institute of Technology. In this project, we added more features such as the number of retailers can be multiple, more stock management algorithm such as "Lot for Lot" or "min-max" algorithm, and graph visualization to further study the economical behavior of the bullwhip effect.
- **SoundNow: English pronunciation learning software (freelance project: 2015-2016)** Developed a java desktop application and online learning management system using django web framework. The speech recognition module has been implemented by using CMUSphinx library.

Languages

Thai:	Native
English:	TOEFL-iBT: 105/120 (Mar 2016)
Japanese:	JLPT N2 (Dec 2016)