

Wittawat Jitkrittum

Research Scientist
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Education

PhD in Machine Learning

📅 2013 – 2017

- 📍 Gatsby Unit, University College London (UCL)
- 📖 Kernel-based distribution features for statistical tests and Bayesian inference
- 👤 Supervisor: Arthur Gretton

MEng in Computer Science

📅 2010 – 2012

- 📍 Tokyo Institute of Technology
- 📖 Feature selection via L_1 -penalized squared-loss mutual information
- 👤 Supervisor: Masashi Sugiyama

BSc in Computer Science (*first class honors, silver medal award*)

📅 2005 – 2009

- 📍 Sirindhorn International Institute of Technology (SIIT), Thammasat University
- 📖 Question Answering System for Thai Wikipedia
- 👤 Supervisor: Thanaruk Theeramunkong

Work Experience

Research Scientist, Google Research (New York)

📅 5/2020 – present

- » Developed ML techniques for efficient inference of large-scale retrieval, image, and language models.
- » Collaborated with YouTube to develop ML models for trust and safety applications.
- » US Patent (US20230130021A1). Jitkrittum et al., 2022. *Privacy-preserving machine learning model implementations*. Filed on Oct 26, 2022 (patent pending).

Postdoctoral Researcher, Max Planck Institute for Intelligent Systems

📅 1/2018 – 4/2020

With Prof. Bernhard Schölkopf in Tübingen, Germany.

- » Developed statistical techniques for comparing intractable models (e.g., unnormalized models, GANs).
- » Published at NeurIPS 2018, ICML 2019, 2× NeurIPS 2019, 2× UAI 2020, NeurIPS 2020, and AISTATS 2020.

Graduate Course Teaching Assistant, University College London

📅 2014, 2016

- » Approximate Inference and Learning in Probabilistic Models
- » Reproducing Kernel Hilbert Spaces for Machine Learning

Programming Lab Instructor, Sirindhorn International Institute of Technology

📅 2012 – 2013

Led hands-on programming sessions on basic programming in C, Java, PHP & MySQL. Class size: 50.

Awards and Honors

🎓 European Laboratory for Learning and Intelligent Systems (ELLIS) PhD Award

📅 2019

For outstanding research achievements during the PhD dissertation phase. Awarded to 6 recipients in 2016-2018. <https://ellis.eu/news/ellis-phd-award>.



NeurIPS 2017 Best Paper Award

📅 12/2017

Awarded to 3 out of 3240 submissions to NeurIPS 2017. Media coverage as podcast by TWiML & AI (<https://goo.gl/3nkL7Q>).



Gatsby Unit Studentship (PhD study)

📅 2013 – 2017

Full scholarship with stipend for PhD study at Gatsby Unit, University College London.



Okazaki Kaheita Scholarship (master's degree)

📅 2010 – 2012

Full scholarship with stipend for master's degree study. Awarded to one Thai student once every 2-3 years.



Second Prize at National Software Contest (NSC), Thailand

📅 2010

Project: [Thai Text Tokenization with a Binary Classifier](#).



Second Prize at National Software Contest (NSC), Thailand

📅 2009

Project: [Question Answering System for Thai Wikipedia](#). One of the first factoid Thai Q&A systems based on Thai Wikipedia.

Professional Activities

- **Workflow Chair** for AISTATS 2021
- **Area chair** for ACML 2020-2021, ICLR 2023,
- **Publicity Chair** for AISTATS 2016
- **Journal Reviewer**
 - Journal of Machine Learning Research
 - Information and Inference
- **Conference reviewer**
 - NeurIPS 2015-2022. Top 10% reviewer of NeurIPS 2020.
 - ICML 2016-2023. Top 5% reviewer of ICML 2019.
 - UAI 2021 emergency reviewer
 - AISTATS 2017-2019
 - Asian Conference on Machine Learning (ACML) 2017
 - International Conference on Learning Representations (ICLR) 2017
- **Co-organizer of regional machine learning summer schools:**
 - The Machine Learning Summer School (MLSS) 2020 (virtual). <http://mlss.tuebingen.mpg.de/2020/>.
 - The Southeast Asia Machine Learning School, Indonesia, 8-12 July 2019. <https://www.seamls.ai>.
 - The 1st Machine Learning Research School (MLRS) in Bangkok, Thailand, 4-11 August 2019.
 - The 2nd MLRS in Bangkok, Thailand, 2-9 August 2023. <https://www.mlrs.ai>
 - The 1st Online Asian Machine Learning School (OAMLS) 2021. <https://www.acml-conf.org/2021/school/>.
 - The 2nd OAMLS 2022. <https://www.acml-conf.org/2022/oamls.html>.
- **Workshop Reviewer**
 - NeurIPS Workshop on Machine Learning Open Source Software 2018
 - NeurIPS Workshop on Advances in Approximate Bayesian Inference 2015-2017.
- **Selection committee for PhD programs** (2019)
 - The Max Planck ETH Center for Learning Systems (CLS) PhD fellowship program.
 - International Max Planck Research School for Intelligent Systems (IMPRS-IS) PhD program.
 - Cambridge-Tübingen Machine Learning PhD Program.

Project Supervision

Name	Affiliation	Context
Sizhe Li	London School of Economics and Political Science	Master's thesis (2023)
Yujie Zhang	London School of Economics and Political Science	Master's thesis (2023)
Zhendong Wang	London School of Economics and Political Science	Master's thesis (2023)
Jingyan Lu	London School of Economics and Political Science	Master's thesis (2023)
Jenning Lim	Max Planck Institute for Intelligent Systems	Pre-doctoral internship (2019)

Invited Talks

📍 Stein's Method: The Golden Anniversary, National University of Singapore	📅 7/2022
📍 Deep Learning and Artificial Intelligence Summer School 2021, Thailand	📅 5/2021
📍 IBM Research, NY, USA. Virtual talk on model comparison of generative models.	📅 12/2020
📍 EURECOM, France (virtual talk)	📅 11/2020
📍 NeurIPS 2019 Tutorial (audience size: 3000+).	📅 12/2019
📍 Swiss Data Science Center, Zürich	📅 10/2019
📍 Data, Learning and Inference (DALI) 2019, Spain (http://dalimeeting.org)	📅 9/2019
📍 Vidyasirimedhi Institute of Science and Technology (VISTEC), Thailand	📅 12/2018
📍 Vidyasirimedhi Institute of Science and Technology (VISTEC), Thailand	📅 3/2018
📍 Chulalongkorn University, Thailand	📅 3/2018
📍 Bangkok Machine Learning Meetup	📅 3/2018
📍 Workshop on Functional Inference and Machine Intelligence, Japan	📅 2/2018
📍 Department of Computer Science, University of Bristol	📅 12/2017
📍 MLTrain Workshop: Learn How to Code a Paper at NeurIPS 2017	📅 12/2017
📍 Probabilistic Graphical Model Workshop II, The Institute of Statistical Mathematics, Japan	📅 2/2017
📍 Sugiyama-Sato Lab, University of Tokyo	📅 4/2016
📍 Probabilistic Graphical Model Workshop, The Institute of Statistical Mathematics, Japan	📅 3/2016

Publications

For the complete list of publications, please see <http://wittawat.com>.

1. Jitkrittum, W., Gupta, N., Menon, A. K., Narasimhan, H., Rawat, A. S., & Kumar, S. (2023). When does confidence-based cascade deferral suffice? *NeurIPS*. <https://arxiv.org/abs/2307.02764>
2. Narasimhan, H., Menon, A. K., Jitkrittum, W., & Kumar, S. (2023). Learning to reject meets OOD detection: Are all abstentions created equal? <https://arxiv.org/abs/2301.12386>
3. Kim, S., Rawat, A. S., Zaheer, M., Jayasumana, S., Sadhanala, V., Jitkrittum, W., Menon, A. K., Fergus, R., & Kumar, S. (2023). Embeddistill: A geometric knowledge distillation for information retrieval. <https://arxiv.org/abs/2301.12005>
4. Narasimhan, H., Jitkrittum, W., Menon, A. K., Rawat, A. S., & Kumar, S. (2022). Post-hoc estimators for learning to defer to an expert. *NeurIPS*
5. Sangkloy, P., Jitkrittum, W., Yang, D., & Hays, J. (2022). A sketch is worth a thousand words: Image retrieval with text and sketch. *European Conference on Computer Vision*
6. Schrab, A., Jitkrittum, W., Szabó, Z., Sejdinovic, D., & Gretton, A. (2022). Discussion of multiscale fisher's independence test for multivariate dependence. *Biometrika*
7. Kübler, J. M., Jitkrittum, W., Schölkopf, B., & Muandet, K. (2022). A witness two-sample test. *AISTATS*, 151, 1403–1419. <https://proceedings.mlr.press/v151/kubler22a.html>
8. Jitkrittum, W., Menon, A. K., Rawat, A. S., & Kumar, S. (2022). ELM: Embedding and logit margins for long-tail learning. <https://arxiv.org/abs/2204.13208>
9. Park, M., Vinaroz, M., & Jitkrittum, W. (2021). Abcdp: Approximate bayesian computation with differential privacy. *Entropy*, 23(8). <https://www.mdpi.com/1099-4300/23/8/961>

10. Rawat, A. S., Menon, A. K., [Jitkrittum](#), W., Jayasumana, S., Yu, F. X., Reddi, S., & Kumar, S. (2021). Disentangling sampling and labeling bias for learning in large-output spaces. *ICML*
11. Zhu, J.-J., [Jitkrittum](#), W., Diehl, M., & Schölkopf, B. (2021). Kernel distributionally robust optimization: Generalized duality theorem and stochastic approximation. *AISTATS*, 130, 280–288
12. Lim, J. N., Yamada, M., [Jitkrittum](#), W., Terada, Y., Matsui, S., & Shimodaira, H. (2020). More powerful selective kernel tests for feature selection. *AISTATS*, 108, 820–830
13. Liu, S., Kanamori, T., [Jitkrittum](#), W., & Chen, Y. (2019). Fisher efficient inference of intractable models. In *NeurIPS* (pp. 8790–8800). Curran Associates, Inc.
14. [Jitkrittum](#), W., Kanagawa, H., & Schölkopf, B. (2020). Testing goodness of fit of conditional density models with kernels. *UAI*
15. Muandet, K., [Jitkrittum](#), W., & Kübler, J. (2020). Kernel conditional moment test via maximum moment restriction. *UAI*
16. Kübler, J. M., [Jitkrittum](#), W., Schölkopf, B., & Muandet, K. (2020). Learning kernel tests without data splitting. In *NeurIPS*
17. Lim, J. N., Yamada, M., Schölkopf, B., & [Jitkrittum](#), W. (2019). Kernel Stein tests for multiple model comparison. *NeurIPS*, 2240–2250
18. [Jitkrittum](#)*, W., Sangkloy*, P., Gondal, M. W., Raj, A., Hays, J., & Schölkopf, B. (2019). Kernel mean matching for content addressability of GANs [**Equal contribution*. *Long oral presentation*.]. *ICML*
19. [Jitkrittum](#), W., Kanagawa, H., Sangkloy, P., Hays, J., Schölkopf, B., & Gretton, A. (2018). Informative features for model comparison. *NeurIPS*
20. [Jitkrittum](#), W., Xu, W., Szabó, Z., Fukumizu, K., & Gretton, A. (2017). A linear-time kernel goodness-of-fit test [*Best paper award*, 3 out of 3240 submissions]. *NeurIPS*
21. [Jitkrittum](#), W., Szabó, Z., & Gretton, A. (2017). An adaptive test of independence with analytic kernel embeddings. *ICML*
22. [Jitkrittum](#), W., Szabó, Z., Chwialkowski, K., & Gretton, A. (2016). Interpretable distribution features with maximum testing power [(*Oral presentation*, 1.8%)]. *NeurIPS*
23. Park*, M., [Jitkrittum](#)*, W., & Sejdinovic, D. (2016). K2-ABC: Approximate Bayesian computation with kernel embeddings [**Equal contribution*. *Oral presentation*, 6.5%]. *AISTATS*
24. [Jitkrittum](#), W., Gretton, A., Heess, N., Eslami, S. M. A., Lakshminarayanan, B., Sejdinovic, D., & Szabó, Z. (2015). Kernel-based just-in-time learning for passing expectation propagation messages. *UAI*
25. Yamada, M., [Jitkrittum](#), W., Sigal, L., Xing, E. P., & Sugiyama, M. (2014). High-dimensional feature selection by feature-wise kernelized lasso. *Neural Computation*, 26(1)
26. [Jitkrittum](#), W., Hachiya, H., & Sugiyama, M. (2013). Feature selection via ℓ_1 -penalized squared-loss mutual information. *IEICE Transactions*, 96-D(7), 1513–1524

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