Wittawat **Jitkrittum**

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Education

PhD Candidate in Machine Learning — *London, UK*
Gatsby Unit, University College London — *2013/9-2017/9 (expected)*
- **Thesis**: Kernel-Based Distribution Features for Inference and Statistical Tests
- **Supervisor**: Arthur Gretton
- Courseworks: Probabilistic and Unsupervised Learning, Functional Analysis (audit), Theoretical Neuroscience

M.Eng. in Computer Science — *Tokyo, Japan*
Tokyo Institute of Technology — *2010-2012*
- **GPA**: 3.67/4.00 (honors)
- **Thesis**: Feature Selection via ℓ_1-Penalized Squared-Loss Mutual Information
- **Supervisor**: Masashi Sugiyama
- Courseworks: Advanced Artificial Intelligence, Pattern Information Processing, Machine Learning, Advanced Data Analysis

B.Sc. in Computer Science — *Thailand*
Sirindhorn International Institute of Technology (SIIT), Thammasat University — *2005-2009*
- **GPA**: 3.93/4.00 (honors)
- **Senior Project**: Question Answering System for Thai Wikipedia
- **Supervisor**: Thanaruk Theeramunkong
- Courseworks: Calculus, Linear Algebra, Discrete Mathematics, Engineering Statistics, Numerical Optimization, Artificial Intelligence, Natural Language Processing

Publications

Preprints/Ongoing Works

1. **Wittawat Jitkrittum**, Zoltán Szabó, and Arthur Gretton. An adaptive test of independence with analytic kernel embeddings, 2016a. Preprint. `https://arxiv.org/abs/1610.04782`

Journal Articles

1. Kiyohito Iigaya, Aurelie Jolivald, **Wittawat Jitkrittum**, Iain Gilchrist, Peter Dayan, Elizabeth Paul, and Mike Mendl. Cognitive bias in ambiguity judgements: Using computational models to dissect the effects of mild mood manipulation in humans. *Plos One*, 2016
2. Makoto Yamada, **Wittawat Jitkrittum**, Leonid Sigal, Eric P. Xing, and Masashi Sugiyama. High-dimensional feature selection by feature-wise kernelized lasso. *Neural Computation*, 26(1), 2014
3. **Wittawat Jitkrittum**, Hirotaka Hachiya, and Masashi Sugiyama. Feature selection via ℓ_1-penalized squared-loss mutual information. *IEICE Transactions*, 96-D(7):1513–1524, 2013

Peer-Reviewed Conference Papers

1. **Wittawat Jitkrittum**, Zoltán Szabó, Kacper Chwialkowski, and Arthur Gretton. Interpretable distribution features with maximum testing power. In *NIPS*, 2016b. (Oral presentation, 1.8%)
2. Mijung Park, **Wittawat Jitkrittum**, and Dino Sejdinovic. K2-ABC: Approximate Bayesian computation with kernel embeddings. In *AISTATS*, 2016. *(The first two authors contributed equally. Oral presentation, 6.5%)*
3. Mijung Park, **Wittawat Jitkrittum**, Ahmad Qamar, Zoltán Szabó, Lars Buesing, and Maneesh Sahani. Bayesian manifold learning: The locally linear latent variable model. In *NIPS*, 2015. (Acceptance rate: 21.8%)
4. **Wittawat Jitkrittum**, Arthur Gretton, Nicolas Heess, S. M. Ali Eslami, Balaji Lakshminarayanan, Dino Sejdinovic, and Zoltán Szabó. Kernel-based just-in-time learning for passing expectation propagation messages. In *UAI*, 2015
5. Gang Niu, **Wittawat Jitkrittum**, Bo Dai, Hirotaka Hachiya, and Masashi Sugiyama. Squared-loss mutual information regularization: A novel information-theoretic approach to semi-supervised learning. In *ICML*, 2013

6. Choochart Haruechaiyasak, Chatchawal Sangkeettrakarn, and **Wittawat Jitkrittum**. Managing offline educational web contents with search engine tools. In *International Conference on Asia-Pacific Digital Libraries*, pages 444–453, 2007

Workshop Papers

1. Vincent Adam, Joana Soldado-Magraner, **Wittawat Jitkrittum**, Heiko Strathmann, Balaji Lakshminarayanan, Alessandro Davide Ialongo, Gergo Bohner, Ben Dongsung Huh, Lea Goetz, Shaun Dowling, Julian Vlad Serban, and Matthieu Louis. Performance of synchrony and spectral-based features in early seizure detection: exploring feature combinations and effect of latency. *International Workshop on Seizure Prediction (IWSP) 2015: Epilepsy Mechanisms, Models, Prediction and Control*, 2015
2. **Wittawat Jitkrittum**, Choochart Haruechaiyasak, and Thanaruk Theeramunkong. QAST: question answering system for Thai wikipedia. In *Proceedings of the 2009 Workshop on Knowledge and Reasoning for Answering Questions*, KRAQ '09. Association for Computational Linguistics, 2009
3. Choochart Haruechaiyasak, **Wittawat Jitkrittum**, Chatchawal Sangkeettrakarn, and Chaianun Damrongrat. Implementing news article category browsing based on text categorization technique. In *Web Intelligence/IAT Workshops*, 2008

Experience

Graduate Course Teaching Assistant — *University College London*

Course: Reproducing Kernel Hilbert Spaces in Machine Learning — *2016*

- Duties include marking assignments, and answering course related questions.

Graduate Course Teaching Assistant — *Gatsby Unit, UCL*

Course: Probabilistic and Unsupervised Learning — *2014*

- Duties include marking assignments, organizing weekly tutorials, and answering course related questions.

Lab Instructor — *SIIT*

Basic C, Java, programming and web development — *2012-2013*

- Prepared teaching materials and led hands-on programming sessions.
- Teaching evaluation: 4.8/5.0. Class sizes: 30-40.

Research Assistant — *SIIT*

Research on Text Retrieval with Dr. Thanaruk Theeramunkong — *2009-2010*

- Collaboratively studied the use of association rule mining techniques for discovering relations among Thai news articles.
- Implemented a server-sided online application in Java to automatically find news relations.

Undergraduate Course Teaching Assistant — *SIIT*

Basic C, Java, and database systems. — *2008-2010*

- Supervise students in lab sessions on basic C, Java programming, and database systems.

Research Assistant — *NECTEC, Thailand*

Research on Thai Language Processing with Dr. Choochart Haruechaiyasak — *2007-2008*

- At Human Language Technology Lab, National Electronics and Computer Technology Center (NECTEC), Thailand
- Empirically studied standard dimensionality reduction techniques and classification algorithms to increase the accuracy of Thai news article categorization.
- Designed and implemented a standalone search engine tool that allows users to manage, archive and retrieve contents without an Internet connection. Thousands of CD-ROMs containing the tool were distributed to schools in remote areas.

Awards & Scholarships

Gatsby Unit Studentship — *Gatsby Unit, UCL*

Full Scholarship for PhD Study — *2013-present*

- Full scholarship with stipend from the Gatsby Charitable Foundation for PhD study at Gatsby Unit, University College London. Awarded to 2-4 students per year.

Okazaki Kaheita Scholarship — *Japan*

Full scholarship for Master Study — *2010-2012*

- Full scholarship with stipend for master study in Japan. Awarded to only one student per country once every three years.

National Software Contest Award — *Thailand*

Software Development Competition Award — *2010*

- 2^{nd} place at National Software Contest 2010 with the project "Thai Text Tokenization with a Binary Classifier" in "Thai Language Processing" category.
- Instead of commonly used expensive word sequence modelling techniques, we use a decision tree to classify each character into either "word beginning" or "not word beginning" based on character-level features generated from local context. This approach offers a very fast tokenizer while achieving a comparable accuracy (95.5%) to commonly used techniques such as the conditional random field.

National Software Contest Award *Thailand*

Software Development Competition Award *2009*

- 2^{nd} place at National Software Contest 2009 with the project "Question Answering System for Thai Wikipedia" in "Software for Scientific Development" category.
- Developed one of the first factoid Thai question answering systems using Thai Wikipedia as the knowledge base. Two types of information are used for answering questions: (1) structured information extracted and stored in the form of Resource Description Framework (RDF), and (2) unstructured texts stored in a search index for keyword-based search.

Silver Medal for High Academic Rank *Thailand*

Ranked second among senior-year computer science students at SIIT. *2009*

Senior Project Financial Support *Thailand*

Research Funding *2008-2009*

- Financial support for the senior project titled "Question Answering System for Thai Wikipedia" From Young Scientist and Technologist Programme, National Science and Technology Development Agency.

Good Academic Performance Scholarship *Thailand*

SCG Talent Scholarship, The Siam Cement Group *2008*

- A competitive scholarship awarded to 3-5 senior-year students from top universities.

Good Academic Performance Scholarship *SIIT*

Competitive quarter scholarship for students with good academic performance. *2006-2009*

Scholarship for an Intensive Japanese Course *Thailand*

Thai Wacoal Public Company Limited *2004-2005*

- One-year full scholarship for an intensive Japanese program at Waseda Education (Thailand).

Talks

2016	**Oral Presentation**, Interpretable Distribution Features With Maximum Testing Power.	*NIPS*
2016	**Oral Presentation**, K2-ABC: Approximate Bayesian Computation with Kernel Embeddings.	*AISTATS*
2016/3	**Invited Talk**, Interpretable Distribution Features With Maximum Testing Power. At Sugiyama-Sato Lab, University of Tokyo.	
2016/3	**Invited Talk**, Improving Approximate Bayesian Inference with Kernel Methods. At Probabilistic Graphical Model Workshop, The Institute of Statistical Mathematics.	

Activities

2016/3	**Visiting Researcher**, The Institute of Statistical Mathematics, Tokyo, Japan. Hosted by Prof. Kenji Fukumizu.
2016	**Publicity Chair**, AISTATS 2016.
Since 2015	**Conference Reviewer**, ICLR 2017, AISTATS 2017, NIPS 2015-2016, ICML 2016, NIPS Workshop on Advances in Approximate Bayesian Inference 2015-2016.
Since 2014	**Machine Learning Journal Club Organizer**, Gatsby Unit, UCL.
2014/9	**Workshop Volunteer**, Attended and helped organize UCL-Duke 2-day Workshop on Sensing and Analysis of High-Dimensional Data at UCL.
2014/8	**Data Mining Competition**, Participated in a Kaggle Competition on predicting seizures from intracranial EEG recordings. Final world rank of our team was 9 out of 205.

Skills

Languages

Thai	Native
English	Full professional proficiency. TOEFL iBT: 103/120 (2012)
Japanese	Professional working proficiency. Japanese-Language Proficiency Test (JLPT) Level 1 (2006)
Chinese	Elementary proficiency

Tools

Most Experienced	Python (SciPy, Numpy, Matplotlib, Theano), Matlab, Latex
Experienced	Java, C# (Infer.NET), C, PHP, HTML, CSS, MySQL, Javascript
Others	Bash shell, Ubuntu Linux, Arduino C