

## LOW, BRYAN KIAN HSIANG

## CURRICULUM VITAE

Associate Professor of Computer Science (with tenure)  
School of Computing, National University of Singapore (NUS)

Director of AI Research, [AI Singapore](#)

Faculty Member, [Integrative Sciences & Engineering Programme, NUS Graduate School](#)

Faculty Affiliate, [Institute of Data Science](#)



## RESEARCH INTERESTS

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- Probabilistic machine learning (e.g., Bayesian deep learning, Bayesian non-parametric models)
- Data-efficient machine learning (e.g., Bayesian optimization, active learning, and adaptive sampling)
- Parallel/distributed/collective machine learning and online learning for big data
- Planning under uncertainty and reinforcement learning
- Multi-agent/robot systems (i.e., multi-agent/robot coordination, planning, and learning)

## EDUCATIONAL BACKGROUND

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Sep 2004 - Aug 2009 Carnegie Mellon University

PH.D. IN ELECTRICAL AND COMPUTER ENGINEERING

- Thesis Title: Multi-Robot Adaptive Exploration and Mapping for Environmental Sensing Applications
- Advisors: Prof. [Pradeep K. Khosla](#) and Dr. [John M. Dolan](#)

Jul 2001 - Jul 2002 National University of Singapore

MASTER OF SCIENCE IN COMPUTER SCIENCE (ACCELERATED M.SC. BY RESEARCH)

- Thesis Title: Integrated Robot Planning and Control with Extended Kohonen Maps
- Advisors: Assoc. Prof. Leow, Wee Kheng and Assoc. Prof. Marcelo H. Ang, Jr.
- Award: Winner of [Singapore Computer Society Prize](#) for Best M.Sc. Thesis in School of Computing

Jul 2000 - May 2001 National University of Singapore

BACHELOR OF SCIENCE IN COMPUTER SCIENCE (HONOURS 2ND CLASS UPPER)

Jul 1997 - Jul 2000 National University of Singapore

BACHELOR OF SCIENCE IN COMPUTER SCIENCE (PASS WITH MERIT)

- Cumulative Grade-Point Average: 3.78 / 4 or 4.65 / 5

## HONORS AND AWARDS

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- Sep 2020 Top 33% Reviewer for International Conference on Machine Learning (ICML) 2020
- Jun 2019 Top 5% Reviewer for International Conference on Machine Learning (ICML) 2019
- Mar 2019 - Feb 2022 IEEE Robotics & Automation Society (RAS) [Distinguished Lecturer for the IEEE RAS Technical Committee on Multi-Robot Systems](#)
- Sep 2016 - Jun 2018 Invited to serve as a World Economic Forum's Global Future Councils Fellow for the Council on the Future of Artificial Intelligence and Robotics
- Aug 2017 - Jul 2018 [Faculty Teaching Excellence Award](#) in School of Computing, National University of Singapore
- Aug 2015 - Jul 2018 Nominated for Faculty Teaching Excellence Award in School of Computing, National University of Singapore for three consecutive years
- Nov 2012 Best PhD Forum Paper Award in 6th ACM/IEEE International Conference on Distributed Smart Cameras (ICDSC'12) won by my PhD student, Prabhu Natarajan
- 2006 [Andrew P. Sage Best Transactions Paper Award](#) for the [best paper](#) published in all 3 of the IEEE Transactions on Systems, Man, and Cybernetics - Parts A, B, and C in 2006
- Jun 2010 Featured in AUVSI Unmanned Systems Magazine "Ones to Watch" June 2010 issue
- Sep 2004 - Aug 2009 National University of Singapore Overseas Graduate Scholarship for Ph.D. studies in Department of Electrical and Computer Engineering, Carnegie Mellon University
- Mar 2004 Gold Medalist in 8th National IT Awareness Project Competition (Postgraduate Category) for Overall Best Project "[Task Allocation via Self-Organizing Swarm Coalitions in Distributed Mobile Sensor Network](#)", held by National University of Singapore in conjunction with Ministry of Education
- Jul 2002 - Jul 2003 Winner of [Singapore Computer Society Prize](#) for Best M.Sc. Thesis (among 81 graduates of M.Sc. by research) in School of Computing, National University of Singapore
- Jun 2003 1st Runner-up Team in Cooperative Robotic Search Competition held by Defense Science Organization National Laboratories during Singapore Robotic Games 2003
- Jul 2001 - Jul 2002 Research Scholarship for Accelerated M.Sc. (Comp. Sci.) by Research in National University of Singapore with Top-up Supplement from National Science and Technology Board Award
- Jul 1997 - Jun 2000 Invitation to [Talent Development Programme](#) (Top 5% in National University of Singapore)
- Jul 1998 - Dec 1998 Dean's List
- Jul 1997 - Dec 1997 Dean's List
- Jul 1997 - Jun 1998 National University of Singapore Undergraduate Scholarship awarded by Microcomputer Trade Association of Singapore
- 1994 Invitation to participate in American Invitational Mathematics Examination
- 1994 Honor Roll Pin Winner in American High School Mathematics Examination
- 1993 Certificate of Distinction in Australian Mathematics Competition

## RESEARCH EXPERIENCE AND GRANTS

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Jul 2021 - Aug 2023 Defence Science and Technology Agency (DSTA)  
PRINCIPAL INVESTIGATOR, **Tactics Discovery and Recommendation** Project  
*Project Agreement No. 9021200987, S\$1,143,120*

Apr 2021 - Mar 2024 Institute for Infocomm Research (I2R), A\*STAR  
PRINCIPAL INVESTIGATOR, **Learning with Less Data** Project  
*RIE2020 Advanced Manufacturing and Engineering (AME) Programmatic Fund, S\$1,218,600*  
Lead PI: Dr. Chuan Sheng Foo (I2R, A\*STAR)

Mar 2021 - Mar 2024 Department of Computer Science, National University of Singapore  
PRINCIPAL INVESTIGATOR, **Scalable AI Phenome Platform towards Fast-Forward Plant Breeding (Machine Learning)** Project  
*Ministry of Education (MOE) Academic Research Fund (AcRF) Tier 1, Reimagine Research Scheme (RRS) Fund (Type 2), S\$348,600*

Mar 2020 - Feb 2025 Temasek Life Sciences Laboratory (TLL), National University of Singapore  
PRINCIPAL INVESTIGATOR, **High Performance Precision Agriculture (HiPPA) System** Project  
*RIE2020 Advanced Manufacturing and Engineering (AME) Industry Alignment Fund – Pre Positioning (IAF-PP), S\$1,197,960*  
Lead PI: Prof. Nam Hai Chua (TLL)

Apr 2021 - Mar 2025 Institute of Data Science (IDS), National University of Singapore  
COLLABORATOR, **Toward Trustable Model-centric Sharing for Collaborative Machine Learning** Project  
*AI Singapore Research Programme, S\$8,401,002.40*  
Lead PI: Prof. See-Kiong Ng

Oct 2020 - Oct 2021 Info-Communications Media Development Authority (IMDA)  
PRINCIPAL INVESTIGATOR, **Robust and Scalable Computer Vision for Scene Understanding** Project  
*Research Collaboration Agreement, S\$260,000*

Jul 2017 - Jul 2020 Department of Computer Science, National University of Singapore  
PRINCIPAL INVESTIGATOR, **Scaling up Gaussian Process Predictive Models for Big Data** Project  
*Academic Research Council (ARC), Ministry of Education (MOE) Academic Research Fund (AcRF) Tier 2, S\$737,461*

Jul 2019 - Dec 2019 Temasek Laboratories, National University of Singapore  
PRINCIPAL INVESTIGATOR, **Near-Optimal Distributed Task Allocation for Swarm Applications** Project  
*Research Collaboration Agreement, S\$30,000*  
Co-PI: Dr. Rodney Swee Huat Teo (Temasek Laboratories)

Apr 2017 - May 2021 Singapore-MIT Alliance for Research & Technology (SMART)  
PRINCIPAL INVESTIGATOR, **Automatic Probabilistic Machine Learning for Traffic Modeling and Prediction** Project  
*SMART Subaward Agreement – Future Urban Mobility (FM) IRG, S\$184,999.20*

Jan 2017 - Jun 2021 NUS-Singtel Cyber Security R&D Lab, National University of Singapore

PRINCIPAL INVESTIGATOR, **Predictive Security Analytics based on Traffic Data** Project  
*Research Collaboration Agreement, S\$1,373,746*  
Other PI: Assoc. Prof. Mun Choon Chan (NUS)

May 2019 - Apr 2021 AI in Health Grand Challenge, AI Singapore  
PRINCIPAL INVESTIGATOR, **Explainable AI as a Service for Community Healthcare** Project  
*AI Singapore Grand Challenge Funding Scheme, Grant Award No. AISG-GC-2019-002, S\$5,024,000*  
Lead PI: Prof. Beng Chin Ooi (NUS)

Oct 2018 - Sep 2023 NUS Centre for Research in Privacy Tech. (N-CRiPT), National University of Singapore  
PRINCIPAL INVESTIGATOR, **Privacy-Aware Data Sensing & Gathering Platform** Project  
Centre Director and Collaborator: Prof. Mohan Kankanhalli (NUS)

Feb 2014 - Sep 2018 Sensor-Enhanced Social Media (SeSaMe) Centre, National University of Singapore  
PRINCIPAL INVESTIGATOR, **Foundations of Sentient Multimedia Systems** Project  
Centre Director and Collaborator: Prof. Mohan Kankanhalli (NUS)

- Advance the state-of-the-art theoretical foundations of multimedia data fusion

Feb 2016 - Jul 2016, Dec 2016 - Jul 2017 Panasonic R&D Center Singapore  
PRINCIPAL INVESTIGATOR, **Sonar Data Fusion Algorithm for Object Distance Estimation** Project  
*Research Collaboration Agreements, S\$84,230.40*

- Develop sensor data fusion algorithm for object distance estimation using sonar sensors

Oct 2011 - Mar 2017 Singapore-MIT Alliance for Research & Technology (SMART)  
PRINCIPAL INVESTIGATOR, **Spatiotemporal Modeling and Prediction of Traffic Patterns** Project  
*SMART Subaward Agreements – Future Urban Mobility (FM) IRG, S\$361,456.17*

Mar 2016 - Mar 2017 Panasonic R&D Center Singapore  
PRINCIPAL INVESTIGATOR, **Hyperparameters Tuning using Bayesian Optimization** Project  
*Research Collaboration Agreement, S\$69,336*

- Develop Bayesian optimization algorithm for tuning the hyperparameters of deep learning neural networks

Aug 2010 - Dec 2015 Singapore-MIT Alliance for Research & Technology (SMART)  
PRINCIPAL INVESTIGATOR, **Autonomy in Mobility-On-Demand Systems** Project  
*SMART Subaward Agreements – Future Urban Mobility (FM) IRG, S\$1,348,638.22*  
Other PIs: Prof. David Hsu (NUS) and Assoc. Prof. Marcelo H. Ang, Jr. (NUS)

Sep 2013 - Nov 2014 Sumitomo Electric Industries, Ltd.  
PRINCIPAL INVESTIGATOR, **Estimation/Prediction Algorithm for Traffic Volume without Rich Installation of Detectors** Project  
*Research Collaboration Agreement, JPY\$3,000,000*

- Develop spatiotemporal traffic prediction algorithm for predicting the traffic volume on road networks

Apr 2010 - Mar 2013 Department of Computer Science, National University of Singapore  
PRINCIPAL INVESTIGATOR, **Active Robotic Exploration and Mapping for Environmental Sensing Applications** Project  
*Ministry of Education (MOE) Academic Research Fund (AcRF) Tier 1, S\$165,377*

Sep 2006 - Sep 2009 The Robotics Institute, Carnegie Mellon University  
GRADUATE STUDENT, **Telesupervised Adaptive Ocean Sensor Fleet (TAOSF)** Project  
*NASA Science Mission Directorate: Advanced Information Systems Technology (AIST) Program*

- Devise multi-robot adaptive sampling algorithms for monitoring of ocean phenomena (e.g., algal bloom)
- Perform map inference of ocean and freshwater sensing data collected by robotic sensor boats

Jul 2005 - Sep 2006

The Robotics Institute, Carnegie Mellon University

GRADUATE STUDENT, **Wide Area Prospecting Using Supervised Autonomous Robots** Project

*NASA Exploration Systems Mission Directorate: Research and Technology Development Program - Human and Robotic Technology Formulation Plan Control No. 4120*

- Develop adaptive sampling techniques for multi-robot wide-area mineral prospecting

Jul 2002 - Jul 2003

Institute of Engineering Science, National University of Singapore

RESEARCH ENGINEER, **Trainable Computer Vision Systems for Surveillance and Mobile Robot Control**

*National University of Singapore Research Project No. 960684*

- Develop multi-robot task allocation mechanisms based on swarm intelligence principles
- Improve performance and convergence of an ensemble of self-organizing neural networks with second-order learning method
- Enhance the action selection capabilities of robots in single- and multi-robot tasks by cooperation and competition of self-organizing neural networks

May 2001 - Jul 2001

Department of Computer Science, National University of Singapore

RESEARCH ASSISTANT, **Trainable Computer Vision Systems for Surveillance and Mobile Robot Control**

*National University of Singapore Research Project No. 960684*

- Evaluate quantitatively the performance of self-organizing neural networks in learning robot motion control

## TEACHING EXPERIENCE AND GRANTS

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- 3-7 Aug 2020 AI Singapore  
ORGANIZING CO-CHAIR, [AI Summer School \(Virtual\)](#)  
*Financially supported by National Supercomputing Centre Singapore, Salesforce, S\$2,000, and Sea Limited, S\$20,000*
- 22-26 Jul 2019 School of Computing, National University of Singapore  
AI Singapore, Singapore Data Science Consortium  
ORGANIZING CO-CHAIR, [AI Summer School](#)  
*Financially supported by Artificial Intelligence Journal, EUR\$2,000, and Sea Limited, S\$20,000*
- 6-10 Jun 2016 School of Computing, National University of Singapore  
ORGANIZING CHAIR, [2016 IEEE RAS Summer School on Multi-Robot Systems](#)  
*Proposal accepted and financially supported by IEEE Robotics and Automation Society - Technical Education Program (RAS-TEP), US\$40,000*
- Spring 2018-21 Department of Computer Science, National University of Singapore  
LECTURER, **CS3244 Machine Learning** module  
  - [Faculty Teaching Excellence Award](#) during Aug 2017 - Jul 2018
- Fall 2010-11, 2015-17 Department of Computer Science, National University of Singapore  
LECTURER, **CS4246 AI Planning and Decision Making** module  
  - [Faculty Teaching Excellence Award](#) during Aug 2017 - Jul 2018
  - Nominated for Faculty Teaching Excellence Award during Aug 2015 - Jul 2017
- Spring 2011, 2013-17 Department of Computer Science, National University of Singapore  
LECTURER, **CS3243 Introduction to Artificial Intelligence** module  
  - Nominated for Faculty Teaching Excellence Award during Aug 2015 - Jul 2017
- Fall 2009-14 Department of Computer Science, National University of Singapore  
LECTURER, **CS1231 Discrete Structures** module
- Summer 2016 Temasek Defence Systems Institute, National University of Singapore  
LECTURER, **DTS5728 Robotic Technologies for Unmanned Systems** module
- Fall 2007 Department of Electrical and Computer Engineering, Carnegie Mellon University  
TEACHING ASSISTANT, [18-100 Introduction to Electrical and Computer Engineering](#) course  
  - Conduct recitations and lab sessions
- Fall, Spring 2003-4 Department of Computer Science, National University of Singapore  
TEACHING ASSISTANT, **CS1101C Programming Methodology in C** module  
  - Assume dual roles of course tutor and lab coordinator (conduct practical exam, set weekly lab assignments)

CO-AUTHORS : My students §, former thesis advisors †, collaborators ¶

## REFEREED JOURNAL ARTICLES

1. Ruofei Ouyang<sup>§</sup> and Bryan Kian Hsiang Low (2020). [Gaussian Process Decentralized Data Fusion Meets Transfer Learning in Large-Scale Distributed Cooperative Perception](#). In *Autonomous Robots* (Special Issue on Multi-Robot and Multi-Agent Systems), volume 44, issue 3, pages 359-376.
2. Pradeep Varakantham, Bo An, Bryan Low and Jie Zhang (2017). [Artificial Intelligence Research in Singapore: Assisting the Development of a Smart Nation](#). In *AI Magazine*, volume 38, issue 3, pages 102-105.
3. Jie Chen<sup>§</sup>, Bryan Kian Hsiang Low, Patrick Jaillet<sup>¶</sup>, and Yujian Yao<sup>§</sup> (2015). [Gaussian Process Decentralized Data Fusion and Active Sensing for Spatiotemporal Traffic Modeling and Prediction in Mobility-on-Demand Systems](#). In *IEEE Transactions on Automation Science and Engineering* (Special Issue on Networked Cooperative Autonomous Systems), volume 12, issue 3, pages 901-921.
4. Bryan Kian Hsiang Low, Wee Kheng Leow<sup>†</sup>, and Marcelo H. Ang, Jr.<sup>†</sup> (2006). [Autonomic Mobile Sensor Network with Self-Coordinated Task Allocation and Execution](#). In *IEEE Transactions on Systems, Man, and Cybernetics - Part C: Applications and Reviews* (Special Issue on Engineering Autonomic Systems), volume 36, issue 3, pages 315-327 [ Andrew P. Sage Best Transactions Paper Award for the best paper published in all 3 of the IEEE Transactions on Systems, Man, and Cybernetics - Parts A, B, and C in 2006 ].
5. Bryan Kian Hsiang Low, Wee Kheng Leow<sup>†</sup>, and Marcelo H. Ang, Jr.<sup>†</sup> (2005). [An Ensemble of Cooperative Extended Kohonen Maps for Complex Robot Motion Tasks](#). In *Neural Computation*, volume 17, issue 6, pages 1411-1445.

## REFEREED CONFERENCE AND WORKSHOP PROCEEDINGS

(Rigorously refereed: 17 ICML, 13 AAAI, 10 NeurIPS/NIPS, 7 AAMAS full papers, 7 UAI, 6 IJCAI, 2 AISTATS, 1 RSS, 1 WWW, 1 ICAPS, 1 ICLR, among others)

1. Lucas Agussurja<sup>§</sup>, Xinyi Xu<sup>§</sup>, and Bryan Kian Hsiang Low (2022). [On the Convergence of the Shapley Value in Parametric Bayesian Learning Games](#). In *Proceedings of the 39th International Conference on Machine Learning (ICML-22)*, pages 180-196 [21.9% Acceptance Rate].
2. Zhaoxuan Wu<sup>§</sup>, Yao Shu<sup>§</sup>, and Bryan Kian Hsiang Low (2022). [DAVINZ: Data Valuation using Deep Neural Networks at Initialization](#). In *Proceedings of the 39th International Conference on Machine Learning (ICML-22)*, pages 24150-24176 [21.9% Acceptance Rate].
3. Sebastian Tay<sup>§</sup>, Chuan Sheng Foo<sup>¶</sup>, Urano Daisuke<sup>¶</sup>, Richalynn Leong<sup>¶</sup>, and Bryan Kian Hsiang Low (2022). [Efficient Distributionally Robust Bayesian Optimization with Worst-case Sensitivity](#). In *Proceedings of the 39th International Conference on Machine Learning (ICML-22)*, pages 21180-21204 [21.9% Acceptance Rate].
4. Arun Verma<sup>§</sup>, Zhongxiang Dai<sup>§</sup>, and Bryan Kian Hsiang Low (2022). [Bayesian Optimization under Stochastic Delayed Feedback](#). In *Proceedings of the 39th International Conference on Machine Learning (ICML-22)*, pages 22145-22167 [21.9% Acceptance Rate].
5. Zhongxiang Dai<sup>§</sup>, Yizhou Chen<sup>§</sup>, Haibin Yu<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2022). [On Provably Robust Meta-Bayesian Optimization](#). In *Proceedings of the 38th Conference on Uncertainty in Artificial Intelligence (UAI-22)* [32.3% Acceptance Rate].
6. Yao Shu<sup>§</sup>, Yizhou Chen<sup>§</sup>, Zhongxiang Dai<sup>§</sup>, and Bryan Kian Hsiang Low (2022). [Neural Ensemble Search via Bayesian Sampling](#). In *Proceedings of the 38th Conference on Uncertainty in Artificial Intelligence (UAI-22)* [32.3% Acceptance Rate].

7. Rachael Hwee Ling Sim<sup>§</sup>, Xinyi Xu<sup>§</sup>, and Bryan Kian Hsiang Low (2022). **Data Valuation in Machine Learning: “Ingredients”, Strategies, and Open Challenges**. In *Proceedings of the 31st International Joint Conference on Artificial Intelligence (IJCAI-22)*, pages 5607-5614 [18.2% Acceptance Rate].
8. Quoc Phong Nguyen<sup>§</sup>, Ryutaro Oikawa<sup>§</sup>, Dinil Mon Divakaran<sup>¶</sup>, Mun Choon Chan<sup>¶</sup>, and Bryan Kian Hsiang Low (2022). **Markov Chain Monte Carlo-Based Machine Unlearning: Unlearning What Needs to be Forgotten**. In *Proceedings of the 17th ACM ASIA Conference on Computer and Communications Security (ACM ASIACCS’22)*, pages 351-363 [18.4% Acceptance Rate].
9. Yao Shu<sup>§</sup>, Shaofeng Cai, Zhongxiang Dai<sup>§</sup>, Beng Chin Ooi<sup>¶</sup>, and Bryan Kian Hsiang Low (2022). **NASI: Label- and Data-agnostic Neural Architecture Search at Initialization**. In *Proceedings of the 10th International Conference on Learning Representations (ICLR-22)* [32.29% Acceptance Rate].
10. Yizhou Chen<sup>§</sup>, Shizhuo Zhang<sup>§</sup>, and Bryan Kian Hsiang Low (2022). **Near-Optimal Task Selection for Meta-Learning with Mutual Information and Online Variational Bayesian Unlearning**. In *Proceedings of the 25th International Conference on Artificial Intelligence and Statistics (AISTATS-22)*, pages 9091-9113 [29.2% Acceptance Rate].
11. Sebastian Tay<sup>§</sup>, Xinyi Xu<sup>§</sup>, Chuan Sheng Foo<sup>¶</sup>, and Bryan Kian Hsiang Low (2022). **Incentivizing Collaboration in Machine Learning via Synthetic Data Rewards**. In *Proceedings of the 36th AAAI Conference on Artificial Intelligence (AAAI-22)*, pages 9448-9456 [4.26% Acceptance Rate (Oral Presentation)].
12. Xinyi Xu<sup>§</sup>, Zhaoxuan Wu<sup>§</sup>, Chuan Sheng Foo<sup>¶</sup>, and Bryan Kian Hsiang Low (2021). **Validation Free and Replication Robust Volume-based Data Valuation**. In *Advances in Neural Information Processing Systems 34: 35th Annual Conference on Neural Information Processing Systems (NeurIPS’21)*, pages 10837-10848 [25.6% Acceptance Rate].
13. Xinyi Xu<sup>§</sup>, Lingjuan Lyu, Xingjun Ma, Chenglin Miao, Chuan Sheng Foo<sup>¶</sup>, and Bryan Kian Hsiang Low (2021). **Gradient Driven Rewards to Guarantee Fairness in Collaborative Machine Learning**. In *Advances in Neural Information Processing Systems 34: 35th Annual Conference on Neural Information Processing Systems (NeurIPS’21)*, pages 16104-16117 [25.6% Acceptance Rate].
14. Quoc Phong Nguyen<sup>§</sup>, Zhongxiang Dai<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **Optimizing Conditional Value-At-Risk of Black-Box Functions**. In *Advances in Neural Information Processing Systems 34: 35th Annual Conference on Neural Information Processing Systems (NeurIPS’21)*, pages 4170-4180 [25.6% Acceptance Rate].
15. Zhongxiang Dai<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **Differentially Private Federated Bayesian Optimization with Distributed Exploration**. In *Advances in Neural Information Processing Systems 34: 35th Annual Conference on Neural Information Processing Systems (NeurIPS’21)*, pages 9125-9139 [25.6% Acceptance Rate].
16. Xiaofeng Fan<sup>§</sup>, Yining Ma, Zhongxiang Dai<sup>§</sup>, Wei Jing, Cheston Tan<sup>¶</sup>, and Bryan Kian Hsiang Low (2021). **Fault-Tolerant Federated Reinforcement Learning with Theoretical Guarantee**. In *Advances in Neural Information Processing Systems 34: 35th Annual Conference on Neural Information Processing Systems (NeurIPS’21)*, pages 1007-1021 [25.6% Acceptance Rate].
17. Quoc Phong Nguyen<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **Learning to Learn with Gaussian Processes**. In *Proceedings of the 37th Conference on Uncertainty in Artificial Intelligence (UAI-21)*, pages 1466-1475 [26.5% Acceptance Rate].
18. Quoc Phong Nguyen<sup>§</sup>, Zhaoxuan Wu<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **Trusted-Maximizers Entropy Search for Efficient Bayesian Optimization**. In *Proceedings of the 37th Conference on Uncertainty in Artificial Intelligence (UAI-21)*, pages 1486-1495 [26.5% Acceptance Rate].



19. Rachael Hwee Ling Sim<sup>§</sup>, Yehong Zhang<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **Collaborative Bayesian Optimization with Fair Regret**. In *Proceedings of the 38th International Conference on Machine Learning (ICML-21)*, pages 9691-9701 [21.5% Acceptance Rate].
20. Quoc Phong Nguyen<sup>§</sup>, Zhongxiang Dai<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **Value-at-Risk Optimization with Gaussian Processes**. In *Proceedings of the 38th International Conference on Machine Learning (ICML-21)*, pages 8063-8072 [21.5% Acceptance Rate].
21. Chi Thanh Lam<sup>§</sup>, Trong Nghia Hoang<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **Model Fusion for Personalized Learning**. In *Proceedings of the 38th International Conference on Machine Learning (ICML-21)*, pages 5948-5958 [21.5% Acceptance Rate].
22. Trong Nghia Hoang<sup>§</sup>, Shenda Hong, Cao Xiao, Bryan Kian Hsiang Low, and Jimeng Sun (2021). **AID: Active Distillation Machine to Leverage Pre-Trained Black-Box Models in Private Data Settings**. In *Proceedings of the 30th The Web Conference (WWW'21)*, pages 3569-3581 [20.6% Acceptance Rate].
23. Quoc Phong Nguyen<sup>§</sup>, Sebastian Tay<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **Top-*k* Ranking Bayesian Optimization**. In *Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI-21)*, pages 9135-9143 [21.4% Acceptance Rate].
24. Quoc Phong Nguyen<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **An Information-Theoretic Framework for Unifying Active Learning Problems**. In *Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI-21)*, pages 9126-9134 [21.4% Acceptance Rate].
25. Haibin Yu<sup>§</sup>, Dapeng Liu, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2021). **Convolutional Normalizing Flows for Deep Gaussian Processes**. In *Proceedings of the International Joint Conference on Neural Networks (IJCNN'21)*.
26. Quoc Phong Nguyen<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2020). **Variational Bayesian Unlearning**. In *Advances in Neural Information Processing Systems 33: 34th Annual Conference on Neural Information Processing Systems (NeurIPS'20)*, pages 16025-16036 [20.1% Acceptance Rate].
27. Zhongxiang Dai<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2020). **Federated Bayesian Optimization via Thompson Sampling**. In *Advances in Neural Information Processing Systems 33: 34th Annual Conference on Neural Information Processing Systems (NeurIPS'20)*, pages 9687-9699 [20.1% Acceptance Rate].
28. Sreejith Balakrishnan<sup>§</sup>, Quoc Phong Nguyen<sup>§</sup>, Bryan Kian Hsiang Low, and Harold Soh<sup>¶</sup> (2020). **Efficient Exploration of Reward Functions in Inverse Reinforcement Learning via Bayesian Optimization**. In *Advances in Neural Information Processing Systems 33: 34th Annual Conference on Neural Information Processing Systems (NeurIPS'20)*, pages 4187-4198 [20.1% Acceptance Rate].
29. Rachael Hwee Ling Sim<sup>§</sup>, Yehong Zhang<sup>§</sup>, Mun Choon Chan<sup>¶</sup>, and Bryan Kian Hsiang Low (2020). **Collaborative Machine Learning with Incentive-Aware Model Rewards**. In *Proceedings of the 37th International Conference on Machine Learning (ICML-20)*, pages 8927-8936 [21.8% Acceptance Rate].
30. Dmitrii Kharkovskii<sup>§</sup>, Zhongxiang Dai<sup>§</sup>, and Bryan Kian Hsiang Low (2020). **Private Outsourced Bayesian Optimization**. In *Proceedings of the 37th International Conference on Machine Learning (ICML-20)*, pages 5231-5242 [21.8% Acceptance Rate].
31. Trong Nghia Hoang<sup>§</sup>, Chi Thanh Lam<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2020). **Learning Task-Agnostic Embedding of Multiple Black-Box Experts for Multi-Task Model Fusion**. In *Proceedings of the 37th International Conference on Machine Learning (ICML-20)*, pages 4282-4292 [21.8% Acceptance Rate].

32. Zhongxiang Dai<sup>§</sup>, Yizhou Chen<sup>§</sup>, Bryan Kian Hsiang Low, Patrick Jaillet<sup>¶</sup>, and Teck-Hua Ho<sup>¶</sup> (2020). **R2-B2: Recursive Reasoning-Based Bayesian Optimization for No-Regret Learning in Games**. In *Proceedings of the 37th International Conference on Machine Learning (ICML-20)*, pages 2291-2301 [21.8% Acceptance Rate].
33. Dmitrii Kharkovskii<sup>§</sup>, Chun Kai Ling<sup>§</sup>, and Bryan Kian Hsiang Low (2020). **Nonmyopic Gaussian Process Optimization with Macro-Actions**. In *Proceedings of the 23rd International Conference on Artificial Intelligence and Statistics (AISTATS-20)*, pages 4593-4604 [28.7% Acceptance Rate].
34. Tong Teng<sup>§</sup>, Jie Chen<sup>§</sup>, Yehong Zhang<sup>§</sup>, and Bryan Kian Hsiang Low (2020). **Scalable Variational Bayesian Kernel Selection for Sparse Gaussian Process Regression**. In *Proceedings of the 34th AAAI Conference on Artificial Intelligence (AAAI-20)*, pages 5997-6004 [20.6% Acceptance Rate].
35. Haibin Yu<sup>§</sup>, Yizhou Chen<sup>§</sup>, Zhongxiang Dai<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2019). **Implicit Posterior Variational Inference for Deep Gaussian Processes**. In *Advances in Neural Information Processing Systems 32: 33rd Annual Conference on Neural Information Processing Systems (NeurIPS'19)*, pages 14475-14486 [3% Acceptance Rate (Spotlight Presentation)].
36. Yehong Zhang<sup>§</sup>, Zhongxiang Dai<sup>§</sup>, and Bryan Kian Hsiang Low (2019). **Bayesian Optimization with Binary Auxiliary Information**. In *Proceedings of the 35th Conference on Uncertainty in Artificial Intelligence (UAI-19)*, pages 1222-1232 [26.2% Acceptance Rate (Plenary Talk)].
37. Zhongxiang Dai<sup>§</sup>, Haibin Yu<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2019). **Bayesian Optimization Meets Bayesian Optimal Stopping**. In *Proceedings of the 36th International Conference on Machine Learning (ICML-19)*, pages 1496-1506 [22.6% Acceptance Rate].
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40. Jingfeng Zhang<sup>§</sup>, Bo Han, Laura Wynter, Bryan Kian Hsiang Low, and Mohan Kankanhalli<sup>¶</sup> (2019). **Towards Robust ResNet: A Small Step but a Giant Leap**. In *Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI-19)*, pages 4285-4291 [17.9% Acceptance Rate].
41. Quoc Phong Nguyen<sup>§</sup>, Kar Wai Lim<sup>§</sup>, Dinil Mon Divakaran<sup>¶</sup>, Bryan Kian Hsiang Low, and Mun Choon Chan<sup>¶</sup> (2019). **GEE: A Gradient-based Explainable Variational Autoencoder for Network Anomaly Detection**. In *Proceedings of the IEEE Conference on Communications and Network Security (CNS'19)*, pages 91-99 [27.8% Acceptance Rate].
42. Haibin Yu<sup>§</sup>, Trong Nghia Hoang<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2019). **Stochastic Variational Inference for Bayesian Sparse Gaussian Process Regression**. In *Proceedings of the International Joint Conference on Neural Networks (IJCNN'19)* [52.4% Acceptance Rate].
43. Trong Nghia Hoang<sup>§</sup>, Quang Minh Hoang<sup>§</sup>, Ruofei Ouyang<sup>§</sup>, and Bryan Kian Hsiang Low (2018). **Decentralized High-Dimensional Bayesian Optimization with Factor Graphs**. In *Proceedings of the 32nd AAAI Conference on Artificial Intelligence (AAAI-18)*, pages 3231-3238 [24.55% Acceptance Rate].
44. Ruofei Ouyang<sup>§</sup> and Bryan Kian Hsiang Low (2018). **Gaussian Process Decentralized Data Fusion Meets Transfer Learning in Large-Scale Distributed Cooperative Perception**. In *Proceedings of the 32nd AAAI Conference on Artificial Intelligence (AAAI-18)*, pages 3876-3883 [24.55% Acceptance Rate].

45. Erik Daxberger<sup>§</sup> and Bryan Kian Hsiang Low (2017). **Distributed Batch Gaussian Process Optimization**. In *Proceedings of the 34th International Conference on Machine Learning (ICML-17)*, pages 951-960 [25.9% Acceptance Rate].
46. Quang Minh Hoang<sup>§</sup>, Trong Nghia Hoang<sup>§</sup>, and Bryan Kian Hsiang Low (2017). **A Generalized Stochastic Variational Bayesian Hyperparameter Learning Framework for Sparse Spectrum Gaussian Process Regression**. In *Proceedings of the 31st AAAI Conference on Artificial Intelligence (AAAI-17)*, pages 2007-2014 [24.6% Acceptance Rate].
47. Trong Nghia Hoang<sup>§</sup>, Quang Minh Hoang<sup>§</sup>, and Bryan Kian Hsiang Low (2016). **A Distributed Variational Inference Framework for Unifying Parallel Sparse Gaussian Process Regression Models**. In *Proceedings of the 33rd International Conference on Machine Learning (ICML-16)*, pages 382-391 [24.3% Acceptance Rate].
48. Yehong Zhang<sup>§</sup>, Trong Nghia Hoang<sup>§</sup>, Bryan Kian Hsiang Low, and Mohan Kankanhalli<sup>¶</sup> (2016). **Near-Optimal Active Learning of Multi-Output Gaussian Processes**. In *Proceedings of the 30th AAAI Conference on Artificial Intelligence (AAAI-16)*, pages 2351-2357 [25.75% Acceptance Rate].
49. Chun Kai Ling<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2016). **Gaussian Process Planning with Lipschitz Continuous Reward Functions: Towards Unifying Bayesian Optimization, Active Learning, and Beyond**. In *Proceedings of the 30th AAAI Conference on Artificial Intelligence (AAAI-16)*, pages 1860-1866 [25.75% Acceptance Rate].
50. Jie Fu, Hongyin Luo, Jiashi Feng, Bryan Kian Hsiang Low, and Tat-Seng Chua (2016). **DrMAD: Distilling Reverse-Mode Automatic Differentiation for Optimizing Hyperparameters of Deep Neural Networks**. In *Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI-16)*, pages 1469-1475 [ $<25\%$  Acceptance Rate].
51. Chao Wang<sup>§</sup>, Somchaya Liemhetcharat<sup>¶</sup>, and Bryan Kian Hsiang Low (2016). **Multi-Agent Continuous Transportation with Online Balanced Partitioning**. In *Proceedings of the 15th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-16)*, pages 1303-1304.
52. Yuhui Wang, Christian von der Weth, Yehong Zhang<sup>§</sup>, Bryan Kian Hsiang Low, Vivek Singh, and Mohan Kankanhalli<sup>¶</sup> (2016). **Concept-based Hybrid Fusion of Multimodal Event Signals**. In *Proceedings of the IEEE International Symposium on Multimedia (ISM'16)*, pages 14-19 [26.1% Acceptance Rate].
53. Quoc Phong Nguyen<sup>§</sup>, Bryan Kian Hsiang Low, and Patrick Jaillet<sup>¶</sup> (2015). **Inverse Reinforcement Learning with Locally Consistent Reward Functions**. In C. Cortes, N. D. Lawrence, D. D. Lee, M. Sugiyama, R. Garnett, editors, *Advances in Neural Information Processing Systems 28: 29th Annual Conference on Neural Information Processing Systems (NeurIPS'15)*, pages 1747-1755, Curran Associates, Inc. [21.9% Acceptance Rate].
54. Trong Nghia Hoang<sup>§</sup>, Quang Minh Hoang<sup>§</sup>, and Bryan Kian Hsiang Low (2015). **A Unifying Framework of Anytime Sparse Gaussian Process Regression Models with Stochastic Variational Inference for Big Data**. In *Proceedings of the 32nd International Conference on Machine Learning (ICML-15)*, pages 569-578 [26.0% Acceptance Rate].
55. Bryan Kian Hsiang Low, Jiangbo Yu<sup>§</sup>, Jie Chen<sup>§</sup>, and Patrick Jaillet<sup>¶</sup> (2015). **Parallel Gaussian Process Regression for Big Data: Low-Rank Representation Meets Markov Approximation**. In *Proceedings of the 29th AAAI Conference on Artificial Intelligence (AAAI-15)*, pages 2821-2827 [26.67% Acceptance Rate].
56. Trong Nghia Hoang<sup>§</sup>, Bryan Kian Hsiang Low, Patrick Jaillet<sup>¶</sup>, and Mohan Kankanhalli<sup>¶</sup> (2014). **Nonmyopic  $\epsilon$ -Bayes-Optimal Active Learning of Gaussian Processes**. In *Proceedings of the 31st International Conference on Machine Learning (ICML-14)*, pages 739-747 [22.4% Acceptance Rate (Cycle 2)]. Also appeared in *RSS-14 Workshop on Non-Parametric Learning in Robotics*.

57. Nuo Xu<sup>§</sup>, Bryan Kian Hsiang Low, Jie Chen<sup>§</sup>, Keng Kiat Lim<sup>§</sup>, and Etkin Baris Ozgul<sup>§</sup> (2014). **GP-Localize: Persistent Mobile Robot Localization using Online Sparse Gaussian Process Observation Model**. In *Proceedings of the 28th AAAI Conference on Artificial Intelligence (AAAI-14)*, pages 2585-2592 [16.6% Acceptance Rate (Oral Presentation)]. Also appeared in *RSS-14 Workshop on Non-Parametric Learning in Robotics*.
58. Ruofei Ouyang<sup>§</sup>, Bryan Kian Hsiang Low, Jie Chen<sup>§</sup>, and Patrick Jaillet<sup>¶</sup> (2014). **Multi-Robot Active Sensing of Non-Stationary Gaussian Process-Based Environmental Phenomena**. In *Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-14)*, pages 573-580 [23.8% Acceptance Rate]. Also appeared in *RSS-14 Workshop on Non-Parametric Learning in Robotics*.
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60. Trong Nghia Hoang<sup>§</sup>, Bryan Kian Hsiang Low, Patrick Jaillet<sup>¶</sup>, and Mohan Kankanhalli<sup>¶</sup> (2014). **Active Learning is Planning: Nonmyopic  $\epsilon$ -Bayes-Optimal Active Learning of Gaussian Processes**. In T. Calders, F. Esposito, E. Hüllermeier, R. Meo, editors, *Machine Learning and Knowledge Discovery in Databases - European Conference, ECML/PKDD-14 Nectar (New Scientific and Technical Advances in Research) Track*, Part III, LNCS 8726, pages 494-498, Springer Berlin Heidelberg.
61. Bryan Kian Hsiang Low, Nuo Xu<sup>§</sup>, Jie Chen<sup>§</sup>, Keng Kiat Lim<sup>§</sup>, and Etkin Baris Ozgul<sup>§</sup> (2014). **Generalized Online Sparse Gaussian Processes with Application to Persistent Mobile Robot Localization**. In T. Calders, F. Esposito, E. Hüllermeier, R. Meo, editors, *Machine Learning and Knowledge Discovery in Databases - European Conference, ECML/PKDD-14 Nectar (New Scientific and Technical Advances in Research) Track*, Part III, LNCS 8726, pages 499-503, Springer Berlin Heidelberg.
62. Prabhu Natarajan<sup>§</sup>, Bryan Kian Hsiang Low, and Mohan Kankanhalli<sup>¶</sup> (2014). **No One is Left “Unwatched”: Fairness in Observation of Crowds of Mobile Targets in Active Camera Surveillance**. In *Proceedings of the 21st European Conference on Artificial Intelligence (ECAI-14), including Prestigious Applications of Artificial Intelligence (PAIS-14)*, pages 1155-1160.
63. Bryan Kian Hsiang Low, Jie Chen<sup>§</sup>, Trong Nghia Hoang<sup>§</sup>, Nuo Xu<sup>§</sup>, and Patrick Jaillet<sup>¶</sup> (2014). **Recent Advances in Scaling up Gaussian Process Predictive Models for Large Spatiotemporal Data**. In S. Ravela, A. Sandu, editors, *Dynamic Data-Driven Environmental Systems Science - First International Conference, DyDESS’14*, LNCS 8964, pages 167-181, Springer International Publishing.
64. Prabhu Natarajan<sup>§</sup>, Trong Nghia Hoang<sup>§</sup>, Yongkang Wong, Bryan Kian Hsiang Low, and Mohan Kankanhalli<sup>¶</sup> (2014). **Scalable Decision-Theoretic Coordination and Control for Real-time Active Multi-Camera Surveillance**. In *Proceedings of the 8th ACM/IEEE International Conference on Distributed Smart Cameras (ICDSC’14)* (Invited Paper to Special Session on Smart Cameras for Smart Environments), pages 115-120.
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66. Jie Chen<sup>§</sup>, Nannan Cao<sup>§</sup>, Bryan Kian Hsiang Low, Ruofei Ouyang<sup>§</sup>, Colin Keng-Yan Tan, and Patrick Jaillet<sup>¶</sup> (2013). **Parallel Gaussian Process Regression with Low-Rank Covariance Matrix Approximations**. In *Proceedings of the 29th Conference on Uncertainty in Artificial Intelligence (UAI-13)*, pages 152-161 [31.3% Acceptance Rate].
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69. Trong Nghia Hoang<sup>§</sup> and Bryan Kian Hsiang Low (2013). **A General Framework for Interacting Bayes-Optimally with Self-Interested Agents using Arbitrary Parametric Model and Model Prior**. In *Proceedings of the 23rd International Joint Conference on Artificial Intelligence (IJCAI-13)*, pages 1394-1400 [28.0% Acceptance Rate].
70. Nannan Cao<sup>§</sup>, Bryan Kian Hsiang Low, and John M. Dolan<sup>†</sup> (2013). **Multi-Robot Informative Path Planning for Active Sensing of Environmental Phenomena: A Tale of Two Algorithms**. In *Proceedings of the 12th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-13)*, pages 7-14 [22.9% Acceptance Rate].
71. David R. Thompson<sup>¶</sup>, Nathalie Cabrol, Michael Furlong, Craig Hardgrove, Bryan Kian Hsiang Low, Jeffrey Moersch, and David Wettergreen (2013). **Adaptive Sampling of Time Series with Application to Remote Exploration**. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'13)*, pages 3463-3468.
72. Jiangbo Yu<sup>§</sup>, Bryan Kian Hsiang Low, Ali Oran<sup>¶</sup>, and Patrick Jaillet<sup>¶</sup> (2012). **Hierarchical Bayesian Non-parametric Approach to Modeling and Learning the Wisdom of Crowds of Urban Traffic Route Planning Agents**. In *Proceedings of the IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT'12)*, pages 478-585.
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75. Bryan Kian Hsiang Low, Jie Chen<sup>§</sup>, John M. Dolan<sup>†</sup>, Steve Chien<sup>¶</sup>, and David R. Thompson<sup>¶</sup> (2012). **Decentralized Active Robotic Exploration and Mapping for Probabilistic Field Classification in Environmental Sensing**. In *Proceedings of the 11th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-12)*, pages 105-112 [20.4% Acceptance Rate]. Also appeared in *IROS'11 Workshop on Robotics for Environmental Monitoring (WREM-11)*.
76. Prabhu Natarajan<sup>§</sup>, Trong Nghia Hoang<sup>§</sup>, Bryan Kian Hsiang Low, and Mohan Kankanhalli<sup>¶</sup> (2012). **Decision-Theoretic Approach to Maximizing Observation of Multiple Targets in Multi-Camera Surveillance**. In *Proceedings of the 11th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-12)*, pages 155-162 [20.4% Acceptance Rate].
77. Trong Nghia Hoang<sup>§</sup> and Bryan Kian Hsiang Low (2012). **Intention-Aware Planning under Uncertainty for Interacting with Self-Interested, Boundedly Rational Agents**. In *Proceedings of the 11th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-12)*, pages 1233-1234.
78. Zhuang Jie Chong, Baoxing Qin, Tirthankar Bandyopadhyay, Tichakorn Wongpiromsarn, Edward Samuel Rankin, Marcelo H. Ang, Jr.<sup>†</sup>, Emilio Frazzoli<sup>¶</sup>, Daniela Rus<sup>¶</sup>, David Hsu<sup>¶</sup>, and Bryan Kian Hsiang Low

- (2011). **Autonomous Personal Vehicle for the First- and Last-Mile Transportation Services**. In *Proceedings of the 5th IEEE International Conference on Cybernetics and Intelligent Systems and 5th IEEE International Conference on Robotics, Automation and Mechatronics (CIS-RAM'11)*, pages 253-260. Also appeared in *IROS'11 Workshop on Perception and Navigation for Autonomous Vehicles in Human Environment*.
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  81. Bryan Kian Hsiang Low, John M. Dolan<sup>†</sup>, and Pradeep K. Khosla<sup>†</sup> (2009). **Information-Theoretic Approach to Efficient Adaptive Path Planning for Mobile Robotic Environmental Sensing**. In *Proceedings of the 19th International Conference on Automated Planning and Scheduling (ICAPS-09)*, pages 233-240 [33.9% Acceptance Rate]. Also appeared in *IPSN-09 Workshop on Sensor Networks for Earth and Space Science Applications (ESSA-09)*. Also presented orally in *RSS-09 Workshop on Aquatic Robots and Ocean Sampling*.
  82. Bryan Kian Hsiang Low, Gregg Podnar, Stephen Stancliff, John M. Dolan<sup>†</sup>, and Alberto Elfes (2009). **Robot Boats as a Mobile Aquatic Sensor Network**. In *Proceedings of the IPSN-09 Workshop on Sensor Networks for Earth and Space Science Applications (ESSA-09)*.
  83. John M. Dolan<sup>†</sup>, Gregg W. Podnar, Stephen Stancliff, Bryan Kian Hsiang Low, Alberto Elfes, John Higinbotham, Jeffrey C. Hosler, Tiffany A. Moisan, and John Moisan (2009). **Cooperative Aquatic Sensing Using the Telesupervised Adaptive Ocean Sensor Fleet**. In *Proceedings of the SPIE Conference on Remote Sensing of the Ocean, Sea Ice, and Large Water Regions*, volume 7473.
  84. Bryan Kian Hsiang Low, John M. Dolan<sup>†</sup>, and Pradeep K. Khosla<sup>†</sup> (2008). **Adaptive Multi-Robot Wide-Area Exploration And Mapping**. In *Proceedings of the 7th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-08)*, pages 23-30 [22.2% Acceptance Rate]. Also presented as a poster in *RSS-09 Workshop on Aquatic Robots and Ocean Sampling*.
  85. Bryan Kian Hsiang Low, Geoffrey J. Gordon, John M. Dolan<sup>†</sup>, and Pradeep K. Khosla<sup>†</sup> (2007). **Adaptive Sampling for Multi-Robot Wide-Area Exploration**. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'07)*, pages 755-760.
  86. Bryan Kian Hsiang Low, Wee Kheng Leow<sup>†</sup>, and Marcelo H. Ang, Jr.<sup>†</sup> (2004). **Task Allocation via Self-Organizing Swarm Coalitions in Distributed Mobile Sensor Network**. In *Proceedings of the 19th National Conference on Artificial Intelligence (AAAI-04)*, pages 28-33 [26.7% Acceptance Rate].
  87. Bryan Kian Hsiang Low, Wee Kheng Leow<sup>†</sup>, and Marcelo H. Ang, Jr.<sup>†</sup> (2004). **Reactive, Distributed Layered Architecture for Resource-Bounded Multi-Robot Cooperation: Application to Mobile Sensor Network Coverage**. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'04)*, pages 3747-3752.
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91. Bryan Kian Hsiang Low, Wee Kheng Leow<sup>†</sup>, and Marcelo H. Ang, Jr.<sup>†</sup> (2003). **Enhancing the Reactive Capabilities of Integrated Planning and Control with Cooperative Extended Kohonen Maps**. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'03)*, pages 3428-3433.
92. Bryan Kian Hsiang Low, Wee Kheng Leow<sup>†</sup>, and Marcelo H. Ang, Jr.<sup>†</sup> (2002). **A Hybrid Mobile Robot Architecture with Integrated Planning and Control**. In *Proceedings of the 1st International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS-02)*, pages 219-226 [26% Acceptance Rate].
93. Bryan Kian Hsiang Low, Wee Kheng Leow<sup>†</sup>, and Marcelo H. Ang, Jr.<sup>†</sup> (2002). **Integrated Planning and Control of Mobile Robot with Self-Organizing Neural Network**. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA'02)*, pages 3870-3875 [33% Acceptance Rate in Neural Networks Track].

#### TECHNICAL REPORTS AND THESES

1. Bryan Kian Hsiang Low (2009). **Multi-Robot Adaptive Exploration and Mapping for Environmental Sensing Applications**. *Ph.D. Thesis, Technical Report CMU-ECE-2009-024*, Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA.
2. Bryan Kian Hsiang Low, Geoffrey J. Gordon, John M. Dolan<sup>†</sup>, and Pradeep K. Khosla<sup>†</sup> (2005). **Adaptive Sampling for Multi-Robot Wide Area Prospecting**. In *Technical Report CMU-RI-TR-05-51*, Robotics Institute, Carnegie Mellon University, Pittsburgh, PA.
3. Bryan Kian Hsiang Low (2002). **Integrated Robot Planning and Control with Extended Kohonen Maps**. *M.Sc. Thesis*, Department of Computer Science, National University of Singapore [ Singapore Computer Society Prize for best M.Sc. Thesis 2002-2003 ].
4. Bryan Kian Hsiang Low (2001). **Mobile Robots That Learn to Navigate**. *Honors Thesis*, Department of Computer Science, National University of Singapore.

## PROFESSIONAL SERVICE

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- Organizing Co-Chair for *NeurIPS 2021 Workshop on New Frontiers in Federated Learning: Privacy, Fairness, Robustness, Personalization and Data Ownership*
- Panelist in the Panel Discussion: AI Research Development in South East Asia, AI Day, VinAI, 27 August 2021
- Panelist for *IFRR Global Colloquium on Robotics and Agriculture*, 20 Nov 2020
- Assessor for the National Competitive Grants Program (NCGP), Australian Research Council (ARC), May 2019 - Present
- Organizing Co-Chair for *AI Summer School* 2019-2020 (co-organized by School of Computing, NUS, Singapore Data Science Consortium, and AI Singapore)
- Organizing Chair for *2016 IEEE RAS Summer School on Multi-Robot Systems*, 2016
- Sponsorship Chair for *15th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-16)*, 2016
- Workshop Chair for *2015 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT'15)*, 2015
- Co-chair for *Defense, Science & Research Conference (DSR'11) Workshop on Multi-UAV Coordination and Path Planning*, 2011
- Invited to participate in U.S. Data Science Leadership Summit, Westgate Resort & Spa, Park City, Utah, 12-13 October, 2018
- Invited to participate in Global AI Dialogue Series in Seoul, South Korea hosted by Berkman Klein Center for Internet and Society at Harvard University in collaboration with MIT Media Lab and K Governance and Media Lab, 23 June 2017
- Associate editor for
  1. *IEEE International Conference on Robotics and Automation (ICRA)*, 2011, 2020-2022
  2. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2012, 2020-2022
  3. *IEEE Robotics and Automation Letters (RA-L)*, 2021-2022
- Area chair for
  1. *International Conference on Learning Representations (ICLR)*, 2023
  2. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2023
  3. *AAAI Conference on Artificial Intelligence (AAAI)*, 2022
  4. *Robotics: Science and Systems Conference (RSS)*, 2022
  5. *Conference on Robot Learning (CoRL)*, 2020
  6. *International Symposium on Multi-Robot and Multi-Agent Systems (MRS)*, 2019, 2021
  7. *Asian Conference on Machine Learning (ACML)*, 2022
- Best/outstanding paper award committee member for
  1. *AAAI Conference on Artificial Intelligence (AAAI)*, 2022
  2. *International Symposium on Multi-Robot and Multi-Agent Systems (MRS)*, 2019



- Senior program committee member for
  1. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2015, 2020-2022
  2. *IEEE International Conference on Robotics and Automation (ICRA)*, 2022
  3. *European Conference on Artificial Intelligence (ECAI)*, 2020
  4. *AAAI Conference on Artificial Intelligence (AAAI)*, 2019
  5. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2018-2019, 2023
- Program committee board member for *International Joint Conference on Artificial Intelligence (IJCAI)*, 2022-2024
- Program committee member for
  1. *AAAI Conference on Artificial Intelligence, Main Technical Track*, 2010, 2016-2018, 2020, 2021 (Top 25% Program committee member), 2023
  2. *AAAI Conference on Artificial Intelligence, Demonstrations Track*, 2019-2022
  3. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2011, 2017, 2019
  4. *24th International Joint Conference on Artificial Intelligence (IJCAI-15)*, Computational Sustainability Track, 2015
  5. *Conference on Uncertainty in Artificial Intelligence (UAI)*, 2021-2022
  6. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2011-2014, 2016, 2021-2022
  7. *International Conference on Automated Planning and Scheduling (ICAPS)*, Planning and Learning Track, 2018-2019, 2021-2022
  8. *International Conference on Automated Planning and Scheduling (ICAPS)*, 2010-2012
  9. *Robotics: Science and Systems Conference (RSS)*, 2014, 2018, 2020-2021
  10. *Conference on Robot Learning (CoRL)*, 2019
  11. *Asian Conference on Machine Learning (ACML)*, 2018-2019
  12. *2016 IEEE International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAN'16)*, 2016
  13. *IEEE International Conference on Agents (ICA)*, 2016-2018
  14. *RSS Workshop on Informative Path Planning and Adaptive Sampling*, 2019
  15. *AAAI/AAMAS Workshop on Multiagent Interaction without Prior Coordination*, 2014-2017
  16. *11th International Conference on Intelligent Autonomous Systems (IAS-11)*, 2010
- Workshop proposal reviewer for
  1. *Annual Conference on Neural Information Processing Systems (NeurIPS)*, 2022

- Journal reviewer for
  1. *Journal of the American Statistical Association (JASA)*, 2022
  2. *Journal of Artificial Intelligence Research (JAIR)*, 2019
  3. *Journal of Machine Learning Research (JMLR)* Editorial Board since 2020
  4. *Transactions of Machine Learning Research (TMLR)*
  5. *Machine Learning Journal (MLJ)*, Special Issue on Asian Conference on Machine Learning, 2017, 2019
  6. *IEEE Transactions on Neural Networks and Learning Systems (TNNLS)*, 2016, 2018
  7. *IEEE Transactions on Automation Science and Engineering (T-ASE)*, 2019
  8. *International Journal of Robotics Research (IJRR)*, Special Issue on Robotics: Science and Systems Conference 2015, 2016, Special Issue on International Symposium on Experimental Robotics, 2017
  9. *IEEE Transactions on Robotics (T-RO)*, 2004, 2011, 2014-2015
  10. *Journal of Field Robotics (JFR)*, 2017-2018
  11. *Autonomous Robots (AURO)*, Special Issue on Towards Long-Term Autonomy in Marine Robotics, 2015, Special Issue on Online Decision Making in Multi-Robot Coordination, 2016, Special Issue on Distributed Robots: From Fundamentals to Applications, 2017, Special Issue on Multi-Robot and Multi-Agent Systems, 2018
  12. *IEEE Robotics and Automation Letters (RA-L)*, 2016
  13. *Knowledge and Information Systems (KAIS)*, 2018
  14. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2016
  15. *Journal of Autonomous Agents and Multi-agent Systems (JAAMAS)*, Special Issue on Multiagent Interaction without Prior Coordination, 2016
  16. *Journal of Aerospace Information Systems (JAIS)*, 2015
  17. *ACM Transactions on Sensor Networks (TOSN)*, 2012-2013
  18. *International Journal of Sensor Networks (IJSNet)*, Special Issue on Interdisciplinary Design of Algorithms and Protocols in Wireless Sensor Networks, 2007, 2011
  19. *International Journal of Vehicle Autonomous Systems (IJVAS)*, Special Issue on Modelling and Simulation of Complex Mechatronic Systems, 2007
  20. *Control and Intelligent Systems*, 2006
- Conference reviewer for
  1. *Annual Conference on Neural Information Processing Systems (NeurIPS)*, 2013-2016, 2018-2022
  2. *International Conference on Machine Learning (ICML)*, 2019 (Top 5% Reviewer), 2020 (Top 33% Reviewer), 2021 (Expert Reviewer), 2022
  3. *International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019-2022
  4. *International Conference on Learning Representations (ICLR)*, 2019-2021
  5. *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021
  6. *IEEE International Conference on Robotics and Automation (ICRA)*, 2013-2015, 2017
  7. *International Symposium on Multi-Robot and Multi-Agent Systems (MRS)*, 2017
  8. *International Symposium on Robotics Research (ISRR)*, 2017
  9. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2011, 2013-2014, 2019
  10. *9th International Conference on Control, Automation, Robotics and Vision (ICARCV'06)*, 2006
  11. *IEEE International Conference on Networking, Sensing and Control (ICNSC'06)*, 2006

- Service to Department/Faculty/University
  1. Resident Member of the University Research Committee's Informatics and Mathematics Expert Panel, National University of Singapore, September 2019 - August 2022
  2. Member (Associate Professor Representative) of the CS Executive Committee (EXCO), Department of Computer Science, National University of Singapore, 16 August 2020 - Present
  3. Member (Assistant Professor Representative) of the CS Executive Committee (EXCO), Department of Computer Science, National University of Singapore, 1 July 2014 - 30 June 2017
  4. Member of the Graduate Studies Committee, Department of Computer Science, National University of Singapore, November 2014 - November 2016, February 2022 - Present
  5. Member (AI Representative) of the CS Curriculum Committee, Department of Computer Science, National University of Singapore, January 2016 - Present
  6. Member (AI Representative) of the Publication Ranking Committee, Department of Computer Science, National University of Singapore, June 2020 - Present
  7. Member of the NRF Foundational Research Capabilities Study Project Team (General Artificial Intelligence), December 2021 - November 2022
  8. Member of the Aviation Transformation Programme (Funded by NRF) Mid-Term Review Panel, Civil Aviation Authority of Singapore, October 2021 - January 2022
  9. Represented AI Singapore to participate in 2nd NRF UK-SG Strategic Dialogue, 27-29 March, 2018
  
- M.Sc. and M.Comp. thesis committee member for
  1. Han, Yu Xuan (CS NUS) Thesis Title: FedTree: A Framework For Tree-based Federated Learning, 2021
  2. Deng, Ailin (CS NUS) Thesis Title: Anomaly detection based on graph neural networks, 2020
  3. Pochet Etienne, Jean-Marie (CS NUS) Thesis Title: Deep learning for goal-directed autonomous navigation, 2020
  4. Soufiane Eddamani (CS NUS) Thesis Title: Hierarchical planning Using dual decomposition network applied to Starcraft II, 2018
  5. Divya Sivasankaran (CS NUS) Thesis Title: Context-aware fusion for multi-modal biometrics, 2017
  6. Sebastien Alexandre Marie Iooss (CS NUS) Thesis Title: Playing Atari with value iteration networks, 2017
  7. Philip Beh (CS NUS) Thesis Title: Dialog management using active learning algorithms, 2016
  8. Ankit Goyal (CS NUS) Thesis Title: Online learning and planning of dynamical systems using Gaussian processes, 2015
  9. Cai, Shaojun (CS NUS) Thesis Title: Online POMDP planning for vehicle navigation in densely populated area, 2014

- Ph.D. thesis committee member for
  1. Li, Qinbin (CS NUS) Thesis Title: Effective and Efficient Federated Learning on Non-IID Data, 2022
  2. Peter Karkus (ISEP NUS) Thesis Title: Differentiable Robotics: Compositional Deep Learning with Differentiable Algorithm Networks, 2021
  3. Jay Nandy (CS NUS) Thesis Title: Robustness and uncertainty estimation for deep neural networks, 2020
  4. Luo, Yuanfu (CS NUS) Thesis Title: Autonomous driving in mixed traffic: models and algorithm, 2020
  5. Wang, Erli (University of Queensland) Thesis Title: Decision making in an uncertain world, 2019
  6. Li, Jue Kun (CS NUS) Thesis Title: Act to see and see to act: a robotic system for object retrieval in clutter, 2019
  7. Chen, Min (CS NUS) Thesis Title: Planning for human-robot interaction: A POMDP approach with trust and intention models, 2018
  8. Anthony Tompkins (University of Sydney) Thesis Title: Bayesian spatio-temporal modelling with Fourier features, 2018
  9. Goh, Chong Yang (OR MIT) Thesis Title: Learning with structured decision spaces, 2018
  10. Kaveh Taghipour (CS NUS) Thesis Title: Robust trait-specific essay scoring using neural networks and density estimators, 2017
  11. Li, Zhuoru (CS NUS) Thesis Title: Efficient hierarchical reinforcement learning through core task abstraction and context reasoning, 2016
  12. Lim, Zhan Wei (CS NUS) Thesis Title: Planning under uncertainty: From informative path planning to partially observable semi-MDPs, 2015
  13. Nguyen Viet Cuong (CS NUS) Thesis Title: Near-optimality and robustness of greedy algorithms for Bayesian pool-based active learning, 2015
  14. Bai, Haoyu (CS NUS) Thesis Title: Continuous POMDPs for robotic tasks, 2014
  15. Liu, Shilin (CS NUS) Thesis Title: Temporally varying weight regression for speech recognition, 2014
  16. Ye, Nan (CS NUS) Thesis Title: Probabilistic learning: Sparsity and non-decomposable losses, 2013
  17. Nguyen Dinh Truong Huy (CS NUS) Thesis Title: Towards smart assistants in two-party collaboration, 2013
  18. Lau, Qiangfeng Peter (CS NUS) Thesis Title: Effective reinforcement learning for collaborative multi-agent domains, 2013
  19. Wang, Xiangyu (CS NUS) Thesis Title: Multimedia decision fusion, 2012
  20. Ehsan Rehman (CS NUS) Thesis Title: Bounded uncertainty roadmaps, 2012
  21. Achudhan Sivakumar (CS NUS) Thesis Title: UAV swarm coordination and control under realistic weather and network conditions for establishing a wireless communications backbone, 2012

## INVITED TALKS

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- “Learning with Less Data: Automated Machine Learning and Bayesian Optimization”. KAUST Research Conference on Robotics and Autonomy, Melbourne, Australia, KAUST, Saudi Arabia, Feb 28 - Mar 2, 2022
- Invited Keynote Speaker, “Trusted Data Sharing: Incentivizing Collaboration and Rights to be Forgotten (aka Unlearning) in Machine Learning”. 20th IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology, Melbourne, Australia, Dec 14 - 17, 2021
- Invited Keynote Speaker, “Collective Online Learning and Model Fusion in Large Multiagent Systems”. 2nd International Symposium on Multi-Robot and Multi-Agent Systems, Rutgers University, New Brunswick, NJ, USA, Aug 22 - 23, 2019
- “Informative Gaussian Process Planning with Lipschitz Continuous Reward Functions: Towards Unifying Adaptive Sampling, Bayesian Optimization, Active Learning, and Beyond”. International Conference on Robotics and Automation (ICRA) 2018 Workshop on Informative Path Planning and Adaptive Sampling, Brisbane, Australia, May 21, 2018. Symposium on Oceanographic Data Analytics, Norwegian University of Science and Technology, Trondheim, Norway, Nov 27 - 30, 2018
- “AI 101 for Non-Specialists”. Science, Technology and Policy 2018 (The Future of Work) Workshop, Campus for Research Excellence and Technological Enterprise (CREATE), Jul 18, 2018
- “AI Singapore”. MK-GIST Forum, Gwangju Institute of Technology (GIST), Gwangju, Korea, Jul 11, 2018
- “Probabilistic machine learning in robotics”. Intelligent Robotics International Symposium, Japan Advanced Institute of Science and Technology (JAIST), Shiinoki Cultural Complex, Kanazawa, Ishikawa, Feb 24 - 25, 2016
- “Gaussian process-based decentralized data fusion and active sensing agents for large-scale modeling and prediction of spatiotemporal environmental phenomena”. Robotics: Science & Systems (RSS) 2013 Workshop on Robotic Exploration, Monitoring, and Information Collection: Nonparametric Modeling, Information-based Control, and Planning under Uncertainty, Berlin, Germany, Jun 27 - 28, 2013
- “Machine learning seminars”. University of Information Technology (UIT), Vietnam National University (VNU), Ho Chi Minh City, Vietnam, Jun 29 - Jul 2, 2011

## STUDENTS AND POSTDOCS ADVISED

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### CURRENT STUDENTS AND POSTDOCS

1. **Lin, Xiaoqiang** (Ph.D. CS NUS, co-advised with See-Kiong Ng)
2. **Sng, Weicong** (Ph.D. CS NUS)  
*Award.* Recipient of Graduate Tutorship
3. **Yuen, Sherman Sheung Man** (Ph.D. CS NUS)  
*Awards.* Recipient of Graduate Tutorship and Ven. Dr. D. D. Chelliah Gold Medal for the best student in B.Sc. (Honours) in Mathematics in NUS
4. **Qiao, Rui** (Ph.D. CS NUS)  
*Awards.* Recipient of AI Singapore Ph.D. Fellowship and Keppel Award of Excellence for the Top 2 students in B.Eng. in Information Systems Technology and Design (ISTD) pillar in Singapore University of Technology and Design
5. **Zhang, Zeyu** (Ph.D. CS NUS, co-advised with Bolin Ding, Alibaba Group)  
*Awards.* Recipient of Economic Development Board Industrial Postgraduate Programme (EDB IPP)

6. **Wu, Zhaoxuan** (Ph.D. Data Science NUS)  
*Awards.* Recipient of NUS Graduate School for Integrative Sciences and Engineering Scholarship (NGSS), Lijen Industrial Development Medal for the best student in the Honours Year term project in B.Sc. (Honours) - Data Science and Analytics programme
7. **Tay, Sebastian Shenghong** (Ph.D. CS NUS, co-advised with Chuan-Sheng Foo, A\*STAR)  
*Awards.* Recipient of NUS research achievement award, A\*STAR Computing and Information Science Scholarship (ACIS)
8. **Xu, Xinyi** (Ph.D. CS NUS, co-advised with Chuan-Sheng Foo, A\*STAR)  
*Awards.* Recipient of NUS research achievement award, A\*STAR Computing and Information Science Scholarship (ACIS), honor list of student tutors for excellence in teaching
9. **Sim, Rachael Hwee Ling** (Ph.D. CS NUS, co-advised with Patrick Jaillet, MIT)  
*Awards.* Recipient of NUS research achievement award, SMART graduate fellowship, Lee Kuan Yew Gold Medal for best performing graduate in B.Comp. (Computer Science) programme, Tata Consultancy Services Asia Pacific Prize for Best Year 2 B.Comp. (Computer Science) student
10. **Fan, Xiaofeng** (Ph.D. CS NUS, co-advised with Cheston Tan, A\*STAR)  
*Awards.* Recipient of NUS research achievement award, A\*STAR Computing and Information Science Scholarship (ACIS)
11. **Lam, Chi Thanh** (Ph.D. CS NUS, co-advised with Patrick Jaillet, MIT)  
*Awards.* Recipient of NUS research achievement award  $\times 2$ , SMART graduate fellowship, honor list of student tutors for excellence in teaching
12. **Mohit Rajpal** (Ph.D. CS NUS)  
*Awards.* Recipient of NUS President's graduate fellowship
13. **Lucas Agussurja** (Ph.D. CS NUS)  
*Awards.* Recipient of NUS research achievement award
14. **Dai, Zhongxiang** (Ph.D. CS NUS, co-advised with Patrick Jaillet, MIT)  
*Awards.* Recipient of NUS Dean's graduate research excellence award and research achievement award  $\times 2$ , SMART graduate fellowship, and ST Electronics Prizes for being the top Year 1 and Year 2 student in Electrical Engineering  
*Thesis title.* Sample-efficient automated machine learning with Bayesian optimization  
*Current employment.* Postdoctoral fellow, Department of Computer Science, NUS
15. **Shu, Yao** (Ph.D. CS NUS)  
*Award.* Recipient of NUS Dean's graduate research excellence award  
*Thesis title.* Understanding and improving neural architecture search  
*Current employment.* Postdoctoral fellow, Department of Computer Science, NUS
16. **Sreejith Balakrishnan** (Ph.D. CS NUS, co-advised with Harold Soh)  
*Awards.* Recipient of NUS research achievement award and honor list of student tutors for excellence in teaching
17. **Nguyen, Quoc Phong** (Ph.D. CS NUS, 2018, co-advised with Patrick Jaillet, MIT)  
*Awards.* Recipient of NUS research achievement award, SMART SMA3 graduate fellowship, Lee Kuan Yew Gold Medal for best performing graduate in B.Eng. (Computing Engineering) programme, IES Gold Medal for top graduating student in B.Eng. in Computing Engineering, Plenary session speaker at National UROP Congress 2013 for the best UROP project in School of Computing, Top Year 1 Computer Engineering Student trophy  
*Thesis title.* An alternative information-theoretic criterion for active learning  
*Current employment.* Senior postdoctoral fellow, Department of Computer Science, NUS

## GRADUATED STUDENTS AND POSTDOCS

1. **Chen, Yizhou** (Ph.D. CS NUS 2022)  
*Thesis title.* Exploiting Gradient Information for Modern Machine Learning Problems  
*First employment.* Machine Learning Engineer, Shopee, May 2022
2. **Teng, Tong** (Ph.D. CS NUS 2021)  
*Awards.* Recipient of NUS research achievement award  
*Thesis title.* Automated kernel selection for Gaussian process on large datasets  
*First employment.* Research Engineer, Huawei Technologies, Dec 2021
3. **Yu, Haibin** (Ph.D. CS NUS 2020, co-advised with Patrick Jaillet, MIT)  
*Awards.* Recipient of NUS research achievement award and SMART graduate fellowship  
*Thesis title.* New advances in Bayesian inference for Gaussian process and deep Gaussian process models  
*Current employment.* Senior research engineer, Tencent, Shenzhen, Jan 2021
4. **Dmitrii Kharkovskii** (Ph.D. CS NUS 2020)  
*Awards.* Recipient of NUS research achievement award  
*Thesis title.* Automated machine learning: New advances on Bayesian optimization  
*Current employment.* Data scientist, OCBC AI Lab, Aug 2020
5. **Zhang, Yehong** (Ph.D. CS NUS, 2017, co-advised with Mohan Kankanhalli)  
*Awards.* Recipient of AAAI 2016 scholarship and NUS research achievement award  
*Thesis title.* [Data-efficient machine learning with multiple output types and high input dimensions](#)  
*Current employment.* Research assistant professor, Peng Cheng Laboratory, Shenzhen, Aug 2020
6. **Hoang, Trong Nghia** (Ph.D. CS NUS, 2015)  
*Awards.* Recipient of NUS Dean's graduate research excellence award, President's graduate fellowship, and research achievement award  $\times 2$ , AAMAS 2012 scholarship, IJCAI 2013 travel grant award  
*Thesis title.* [New advances on Bayesian and decision-theoretic approaches for interactive machine learning](#)  
*Current employment.* Senior research scientist, Amazon AWS AI Labs, Nov 2020  
*First employment.* Postdoctoral fellow, MIT, Apr 2017
7. **Chen, Jie** (Ph.D. CS NUS, 2013, co-advised with Patrick Jaillet, MIT as a postdoctoral associate, SMART FM)  
*Awards.* Recipient of NUS Dean's graduate research excellence award and research achievement award, UAI 2012 scholarship  
*Thesis title.* [Gaussian process-based decentralized data fusion and active sensing agents: Towards large-scale modeling and prediction of spatiotemporal traffic phenomena](#)  
*Current employment.* Associate research professor, College of Computer Science and Software Engineering, Shenzhen University, Apr 2018
8. **Prabhu Natarajan** (Ph.D. CS NUS, 2013, co-advised with Mohan Kankanhalli)  
*Awards.* Recipient of ICDSC 2012 best PhD forum paper award, NUS research achievement award, AAMAS 2012 scholarship  
*Thesis title.* [Decision-theoretic approach for controlling and coordinating multiple active cameras in surveillance](#)  
*Current employment.* Assistant professor, DigiPen Institute of Technology Singapore, Jun 2016
9. **Lim, Kar Wai** (Ph.D. CS ANU, 2016, co-advised with Mun Choon Chan as a research fellow, NUS-Singtel Cyber Security Research and Development Laboratory)  
*Awards.* Recipient of ACML 2016 best student paper award and AMP prize for honours thesis in actuarial studies (best thesis award)  
*Thesis title.* Nonparametric Bayesian topic modelling with auxiliary data  
*First employment.* Research staff member, IBM Research, Singapore

10. **Li, Cheng** (Ph.D. CS Deakin University, 2015, co-advised with Mun Choon Chan as a research fellow, NUS-Singtel Cyber Security Research and Development Laboratory)  
*Awards.* Recipient of ACML 2016 best paper runner-up award  
*Thesis title.* Exploiting side information in Bayesian nonparametric models and their applications  
*Current employment.* Postdoctoral fellow, Duke-NUS Medical School
11. **Xu, Nuo** (Ph.D. CS NUS, 2017)  
*Awards.* Recipient of AAAI 2014 scholarship and NUS research achievement award  
*Thesis title.* Online Gaussian process filtering for persistent robot localization with arbitrary sensor modalities  
*Current employment.* Backend engineer, Grab
12. **Ouyang, Ruofei** (Ph.D. CS NUS, 2016)  
*Awards.* Recipient of AAMAS 2014 scholarship  
*Thesis title.* [Exploiting decentralized multiagent coordination for large-scale machine learning problems](#)  
*Current employment.* Senior data scientist, Shopee
13. **Chen, Ziyue** (M.Comp. CS NUS, 2020)  
*Thesis title.* Multi-party machine learning: attack and defense
14. **Julien Habis** (M.Comp. CS École Polytechnique, NUS, 2018)  
*Thesis title.* Active learning of Bayesian recurrent neural networks
15. **Wesley Tan** (M.Comp. CS NUS, 2017)  
*Awards.* Recipient of President’s Graduate Fellowship in Nanyang Technological University  
*Thesis title.* Variational Bayesian Actor-Critic  
*Current status.* Ph.D. in Computer Science, Nanyang Technological University, Aug 2017
16. **Son, Jaemin** (M.Sc. CS NUS, 2016, co-advised with Gary Tan)  
*Thesis title.* High-Dimensional Bayesian Optimization with Application to Traffic Simulation
17. **Etkin Baris Ozugul** (M.Sc. CS NUS, 2017)  
*Thesis title.* Shuttle-line Routing for Mobility-on-Demand Systems with Ridesharing
18. **Cao, Nannan** (M.Sc. CS NUS, 2012)  
*Thesis title.* [Information-Theoretic Multi-Robot Path Planning](#)
19. **Ling, Chun Kai** (B.Eng. in Computer Engineering, NUS, 2015)  
*Awards.* Recipient of Lee Kuan Yew Gold Medal for best performing graduate in B.Eng. (Computing Engineering) programme, IES Gold Medal for top graduating student in B.Eng. in Computing Engineering, Defence Science Technology Agency Gold Medal for best local final year student for the degree of B.Eng. (Computer Engineering), Micron Prize for being one of the top two local Year 2 Computer Engineering students, and Alcatel-Lucent Telecommunications Prize for best performance in a module in the area of Communications and Networks in BEng (EE) or BEng (CEG) examinations  
*FYP dissertation title.* Planning and learning in spatiotemporal environmental phenomena  
*Current status.* Ph.D. in Computer Science, CMU, Aug 2017
20. **Hoang, Quang Minh** (B.Comp. in Computational Biology, NUS, 2016)  
*Awards.* Recipient of Lee Kuan Yew Gold Medal for best performing graduate in B.Comp. (Computational Biology) programme, Outstanding Undergraduate Researcher Prize in NUS, and ICML 2015 scholarship  
*UROP dissertation title.* Scaling up Gaussian process inference for high velocity in big data  
*Current status.* Ph.D. in Computer Science, CMU, Aug 2018
21. **Erik Alexander Daxberger** (B.Sc. in Media Informatics, Ludwig-Maximilians-Universität München, 2017)  
*Awards.* Recipient of Cambridge – Tübingen Ph.D. fellowship in machine learning, LMU research award for



excellent students for the Bachelor's thesis, LMUexchange and PROSA scholarships for a student exchange program at NUS, ICML 2017 travel award

*Bachelor's thesis title.* Distributed batch Bayesian optimization




*Current status.* Ph.D., Department of Engineering, University of Cambridge, Jan 2019




22. **Chew, Wan Theng Ruth** (B.Eng. in Computer Engineering, NUS, 2019)  
*Awards.* Recipient of Lee Kuan Yew Gold Medal for best performing graduate in B.Eng. (Computing Engineering) programme, IES Gold Medal for top graduating student in B.Eng. in Computing Engineering, MAS Academic Excellence Prize for best local Year 2 Computer Engineering student  
*FYP dissertation title.* Active learning for inverse reinforcement learning
23. **Advay Bhaskar Pal** (B.Comp. (Honours) CS NUS (Highest Distinction), 2019)  
*Awards.* Recipient of NUSS Medal for Outstanding Achievement awarded to a graduating student from each faculty for outstanding all-round achievements (academic excellence and significant extra-curricular contributions), PwC Prize for Whole Leadership for the most outstanding Year 2 Computer Science student  
*FYP dissertation title.* Adversarial federated learning  
*Current status.* M.S. in Computer Science, Stanford University, Aug 2019
24. **Ho, Yi Hang** (B.Comp. (Honours) CS NUS (Highest Distinction), 2019)  
*Awards.* Recipient of Accenture Gold Medal and Prize for a top student in B.Comp. (Hons) - Computer Science programme  
*FYP dissertation title.* Multi-party machine learning - fair data sharing  
*First employment.* Software engineer, Facebook HQ
25. **Tan, Melvin Jun Keong** (B.Comp. (Honours) CS NUS (Highest Distinction) and B.Sc. (Honours) Statistics NUS, 2019)  
*Awards.* Recipient of Sugar Industry of Singapore Book Prize for best Year 1 Science student  
*FYP dissertation title.* Bayesian optimization with missing data
26. **Hio, Leonard Man Loong** (B.Comp. (Honours) CS NUS (Highest Distinction), 2018)  
*Awards.* Recipient of Lijen Industrial Development Medal for second top student in B.Comp. (Honours) - Computer Science Programme and IEEE Singapore Computer Society Book Prize for the best student in the Honours Year term project  
*FYP dissertation title.* Kernel selection for Gaussian processes  
*First employment.* Software engineer, Facebook HQ
27. **Huang, Feixue** (B.Comp. (Honours) CS NUS (Highest Distinction), 2018)  
*FYP dissertation title.* Bayesian optimization for smart devices  
*First employment.* Software engineer, Facebook HQ
28. **Ang, Karen Mei Yi** (B.Comp. (Honours) CS NUS (Highest Distinction), 2017)  
*Awards.* Recipient of Tata Consultancy Services Asia Pacific Prize  
*FYP dissertation title.* Bayesian optimization with high-dimensional inputs
29. **Nguyen, Quoc Dat** (B.Comp. CS NUS, 2017)  
*FYP dissertation title.* Kernel selection for Gaussian processes  
*First employment.* iOS developer, Sea
30. **Choo, Boon Yong Martin** (B.Comp. CS NUS, 2017)  
*FYP dissertation title.* Playing an interactive game with humanoid robots
31. **Nguyen, Hoang Vu** (B.Comp. CS NUS, 2017)  
*FYP dissertation title.* Bayesian optimization for hyperparameter tuning in deep learning

32. **Chng, Yong Xien** (B.Comp. CS NUS, 2017)  
*FYP dissertation title.* Bayesian optimization for reinforcement learning
33. **Khor, Shi-Jie** (B.Comp. (Honours) CS NUS (Highest Distinction), 2016)  
*Awards.* Recipient of Lee Kuan Yew Gold Medal for best performing graduate in B.Comp. (Computer Science) programme, IEEE Singapore Computer Society Book Prize for the best student in the Honours Year term project, and Tata Consultancy Services Asia Pacific Prize  
*FYP dissertation title.* Kernel Search for Gaussian Processes  
*Current employment.* Software engineer, Facebook Asia Pacific HQ
34. **Nathan Azaria** (B.Comp. (Honours) CS NUS (Highest Distinction), 2016)  
*Awards.* Recipient of National Computer Systems Medal And Prize for the top student in B.Comp. (Hons) - (Computer Science) programme  
*FYP dissertation title.* Stochastic variational inference on multi-output Gaussian process  
*First employment.* Software engineer, Facebook London
35. **Lim, Keng Kiat** (B.Comp. CS NUS, 2016)  
*FYP dissertation title.* Learning with high-dimensional data  
*First employment.* Software engineer, Facebook HQ
36. **Nguyen, Hien Linh** (B.Comp. CS NUS, 2015)  
*FYP dissertation title.* Traffic surveillance with a network of cameras  
*First employment.* Data engineer, Facebook SG
37. **Akshay Viswanathan** (B.Eng. in Computer Engineering (Honours 1st Class), NUS, 2015)  
*FYP dissertation title.* Scaling up machine learning techniques via parallelization for large data  
*First employment.* Senior software engineer, Visa Inc.
38. **Shailendra Khemka** (University Scholars Programme, von Neumann Programme for B.Comp. CS NUS, 2013)  
*Awards.* Recipient of Tata Consultancy Services Asia Pacific Medal and Prize for 2nd best graduate throughout the course of study for B.Comp, Defence Science & Technology Agency Prize for top UROP student in B.Comp, Sung Kah Kay Memorial Prize Winner in NUS University Scholars Programme (USP)  
*FYP dissertation title.* Autonomous search for victims in a disaster situation  
*First employment.* Business solutions: software engineer, Deutsche bank AG - Singapore branch

## REFEREES

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PROF. PRADEEP K. KHOSLA     
 Chancellor, University of California, San Diego

DR. JOHN M. DOLAN     
 Principal Systems Scientist, The Robotics Institute  
 Carnegie Mellon University

PROF. PATRICK JAILLET     
 Department of Electrical Engineering and Computer Science  
 Massachusetts Institute of Technology

DR. ALBERTO ELFES     
 Chief Research Scientist, Autonomous Systems Lab, CSIRO