

Education

National University of Singapore PhD student in Computer Science	Jan 2023 - Present
Quantic School of Business and Technology Master of Business Administration (MBA)	Jul 2020 - Jul 2021
MIT Sloan School of Management Master of Finance; GPA: 4.9/5.0	Sep 2012 - Jun 2013
Massachusetts Institute of Technology (MIT) B.Sc. in Physics and Economics; GPA: 5.0/5.0	Sep 2009 - Jun 2012

Awards and scholarships: NUS School of Computing Teaching Fellowship Scheme (2024); NeurIPS Scholar Award (2023); AI Singapore - CNRS@Create DesCartes Joint PhD Scholarship (2023); NUS School of Computing Research Incentive Award (2023); Sigma Xi (2012); Phi Beta Kappa (2012); Sigma Pi Sigma (2012); PSC Overseas Merit Scholarship (Open) (2008); Singapore Most Outstanding Science Student Award (2008); First Step to Nobel Prize in Physics, 2 Honourable Mentions (2008); International Chemistry Olympiad Bronze (2008), Research Science Institute (2007)

Publications

* Indicates equal contribution

Referred Conference Publications

Zhongxiang Dai*, **Gregory Kang Ruey Lau***, Arun Verma, Yao Shu, Bryan Kian Hsiang Low, Patrick Jaillet. “[Quantum Bayesian Optimization](#)”. In *Advances in Neural Information Processing Systems 36: 37th Annual Conference on Neural Information Processing Systems (NeurIPS'23), New Orleans, Dec 10-16, 2023*. (Acceptance rate 26.1%)

Gregory Kang Ruey Lau*, Apivich Hemachandra*, See-Kiong Ng, Bryan Kian Hsiang Low. “[PINNACLE: PINN Adaptive ColLocation and Experimental points selection](#)”. In *Proceedings of the 12th International Conference on Learning Representations (ICLR'24), Vienna, Austria, May 7-11, 2024*. (Spotlight; Acceptance rate 5%)

Referred Workshop Publications

Gregory Kang Ruey Lau*, Apivich Hemachandra*, See-Kiong Ng, Bryan Kian Hsiang Low. “[PINNACLE: PINN Adaptive ColLocation and Experimental points selection](#)”. In *ICML 2024 AI for Science: Scaling AI for Scientific Discovery Workshop, Vienna, 26 Jul 2024*. (Oral; Acceptance rate 3.5%)

Apivich Hemachandra*, **Gregory Kang Ruey Lau***, See-Kiong Ng, Bryan Kian Hsiang Low. “PIED: Physics-Informed Experimental Design For Inverse Problems”. In *ICML 2024 AI for Science: Scaling AI for Scientific Discovery Workshop, Vienna, 26 Jul 2024*.

Gregory Kang Ruey Lau*, Niu Xinyuan*, Hieu Dao, Jiangwei Chen, Chuan-Sheng Foo, Bryan Kian Hsiang Low. “[Framework for Robust and Scalable Text Watermarking of Original Text](#)”. In *ICML 2024 Workshop on Foundation models in the Wild, Vienna, 26 Jul 2024*.

Gregory Kang Ruey Lau*, Niu Xinyuan*, Hieu Dao, Jiangwei Chen, Chuan-Sheng Foo, Bryan Kian Hsiang Low. “Protecting Text IP in the Era of LLMs with Robust and Scalable Watermarking”. In *ICML 2024 Workshop on Generative AI and Law (GenLaw'24), Vienna, 27 Jul 2024*.

Preprints

Xinyi Xu, Zhaoxuan Wu, Rui Qiao, Arun Verma, Yao Shu, Jingtang Wang, Xinyuan Niu, Zhenfeng He, Jiangwei Chen, Zijian Zhou, **Gregory Kang Ruey Lau**, Hieu Dao, Lucas Agussurja, Rachael Hwee Ling Sim, Xiaoqiang Lin, Wenyang Hu, Zhongxiang Dai, Pang Wei Koh, Bryan Kian Hsiang Low. "[Data-centric AI in the Age of Large Language Models](#)". Preprint, 2024.

Research Experience

Department of Computer Science, National University of Singapore

Singapore

Research Assistant

Sep 2022 - Dec 2022

Advisor: Bryan Kian Hsiang Low

- Conducted literature review of physics-informed machine learning and initiated new research inquiries into addressing weaknesses of physics-informed neural networks through uncertainty quantification, active learning and zeroth-order optimisation methods.
- Established potential partnerships with external researchers to apply physics-informed neural networks to scientific and industrial applications in domains such as remote imaging and climate modelling.

Department of Economics, MIT

Cambridge, MA, USA

Student Researcher

Sep 2010 - Dec 2011

Advisor: Dave Donaldson

- Conducted non-parametric tests via a revealed preference framework on international trade data to determine if international consumption and production patterns appear rational.
- Analysed non-parametric bounds on the gain from international trade to estimate trade restriction's impact to countries' producers and consumers.
- Undergraduate project was featured in MIT's department of economics brochure and website.

Center for Ultra-cold Atoms, MIT

Cambridge, MA, USA

Student Researcher

Sep 2009 - May 2011

Advisor: Wolfgang Ketterle

- Designed and built electronic devices, as well as resolved software issues for experiments on ultracold atoms and molecules.
- Conducted experiments and ran numerical simulations on the novel formation of ultra-cold fermionic NaLi Feshbach molecules.
- Presented work at the MIT Society for Physics Students Research Symposium 2010. Work also contributed to a publication on Physical Review A, and a graduate student's PhD thesis.

Hudson Laboratory, MIT

Cambridge, MA, USA

Student Researcher

Jul 2007 - Jun 2010

Advisor: Eric Hudson

- Performed simulations based on experimental STM spectroscopy data and developed theoretical models for the pseudogap observed in cuprate high temperature superconductors.
- Work was presented at the American Physical Society Physics March Meetings 2010.
- Work done as a high school student during the Research Science Institute program at MIT won honourable mention in the international First Step to Nobel Prize in Physics 2008 competition.

Applied Physics Lab, Defense Science Organisation (DSO)

Singapore

Intern

Jan 2007 - Dec 2008

Advisor: Yuan Liang Lim

- Performed simulations and assisted in outfield testing of newly developed equipment
- Conducted theoretical research on quantum entanglement generation. Work won honourable mention in the international First Step to Nobel Prize in Physics 2008 competition.

Work Experience

Prime Minister's Office (Smart Nation and Digital Government)

Singapore

Senior Assistant Director, Data Strategy

Aug 2021 – Aug 2022

- Led a team that formulates and implements the Singapore Government's data strategy, spanning transformation efforts in data governance, architecture, privacy-preserving tech and capabilities across and within agencies in the Government.
- Drove the public-private data sharing strategy, which involved developing horizontal enablers such as a new data platform and governance frameworks, and launching initiatives in sectors such as healthcare, and urban solutions & sustainability.
- Developed strategic workforce initiatives to build data capabilities in government, such as establishing the competency frameworks and career pathways of agency CDOs, and building a vibrant data community and culture in the government.

Entrepreneurship

Singapore

Cofounder, CEO

Aug 2020 – Jul 2021

- Cofounded PowerUp, an educational platform that teaches practical computational thinking skills to secondary and pre-tertiary students while they create high quality software with visual coding tools used by industry professionals.
- Cofounded CareerNav, a data-powered career management platform that provides an integrated and personalised approach for individuals to plan and track their careers, as well as upskill and network to achieve their goals.
- Was selected and awarded a grant to join Antler, a venture capital programme that supports entrepreneurs in building tech startups.

Ministry of Manpower

Singapore

Assistant Director, Manpower Planning & Policy Division

Jan 2018 – Jul 2020

- Guided the strategic plan and product development of MyCareersFuture.sg, the national online jobs portal which taps on machine learning to conduct skills-based job matches.
- Led a team that analyses labour market conditions and develops new local workforce policies on issues such as labour mobility, underemployment, hiring practices, retrenchments and private sector employment facilitation.
- Facilitated annual negotiations among tripartite partners in the National Wages Council to issue wage-related guidelines.

Economic Development Board Singapore

Singapore

Senior Lead, Infocomms & Media

Jun 2017 – Dec 2017

- Drove business development efforts to get companies to set up or expand operations in Singapore, and successfully attracted a multinational tech company to expand its innovation team to create 40 quality jobs.
- Led a study on the implications of the global digitalization trend to Singapore's economic development strategy.
- Explored new viable industries to develop in Singapore, such as quantum cryptography.

Ministry of Finance

Singapore

Senior Associate, Social Strategy*Mar 2015 – May 2017*

- Initiated the government's first three data analytics projects on social policies that served as proof-of-concept of the value of analytics to policy making, and developed best practices for carrying out inter-agency data analytics projects.
- Worked with inter-agency teams to improve social service delivery by streamlining social schemes and application processes, and implementing more coordinated service delivery models for seniors.
- Reviewed social policies in areas such as long-term care insurance, food tax and social support for seniors

Singapore Navy

Singapore

Programme Manager (NSF) – Virtual Simulation Training*Jan 2014 – Feb 2015*

- Proposed and implemented the first virtual simulation training programme for naval base defence by adapting a commercial games engine, enabling cheaper, more efficient and safer scenario training and planning for both naval base defence squadrons in Singapore.

Shanghai Atlas Capital

Shanghai, China

Intern*Jun 2012 – Aug 2012*

- Assisted on VC deal sourcing and investments focused on tech startups with avg deal size of CNY 50 mn. Interviewed entrepreneurs and senior executives of companies to assess management team, business plan & investment attractiveness.
- Conducted detailed market analysis of several industries and initiated a deal-sourcing project related to green technology.