Dr TAN Hong Ming

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My academic and professional endeavors have given me a unique perspective on the intersection of academia and industry, particularly in the fields of Analytics, Operations Research, and AI. I am Principal Invistigator, Co-Principal Investigator, and collaborator of multiple grants (S$1,697,118 in total). I lead teams of data scientists, research fellows, research assistants, and PhD students, consult for companies on AI and data science applications, and teach Analytics and AI across all levels, from undergraduates to MBA, EMBA and executive programs.

Work Experience

2024–Present **Deputy Head**, *Department of Analytics and Operations*, NUS Business School, National University of Singapore.
- Management and Supervision of Department Operations
- Leads a team for design and implementation of automation for Business School Processes

2023–Present **AI Advisor**, *Nexus Homes*.
- AI and Data strategy and development

2021–Present **Co-Founder**, *ECHE Pte Ltd*.
- Consulting for AI, Data Science, and Operations

2023–Present **Lead AI Advisor**, *X0PA AI*.
- Advise CEO, CTO, and co-founders on company AI strategy and focus
- Advise and lead team of Data Scientists
- Invited speaker for webinar on the use of AI in recruitment, hosted by APSCo Asia

2024–Present **Senior Lecturer**, *Department of Analytics and Operations*, NUS Business School, National University of Singapore.
- Principal investigator: Case Research Grant - Grand Seiko and the Nature of Time – Crafting Luxury the Japanese Way (S$5,000)
- Principal investigator: Optimizing Primary Care Delivery through Predictive Analytics and Behavioral Nudges to Reduce Patient Defaults in Singapore Polyclinics (S$50,000)
- Principal investigator: Optimising Maritime Network Line Design using Reinforcement Learning (S$384,000)
- Co-Principal investigator: AI-led Smart Data Centre Management Application (S$330,000)
- Collaborator with Institute of Mental Health on Screening and Invervention of Depression (Lead for Machine Learning and AI development, S$928,118)
- NUS Business School Teaching Excellence Council Member 2024, 2025
- NUS Annual Teaching Excellence Award 2025
- NUS Business School Teaching Excellence Award 2023, 2024
- Member of Department Evaluation Committee 2024, 2025
- Chair of Department Finance Committee 2023, 2024, 2025
- Member of Department Teaching Committee 2023, 2024
- Program Director - AI for Senior Executives
- Program Director - Human Resource Managment with AI
- Faculty Advisor for Business Analytics Consulting Team
- Faculty Advisor for NUS Private Equity Society

2021–2023 **Lecturer**, *Department of Analytics and Operations*, NUS Business School, National University of Singapore.
- Chair of Department Finance Committee
- Member of Department Teaching Committee
- Awarded SGD50,000 to redevelop DAO1704 for Blended Learning 2.0
- Pioneered the Teaching Training Program for PhD students
- Created Online Executive Education course - Practical Decision Making Using Data Science
- Faculty Advisor for Business Analytics Consulting Team
- Faculty Advisor for NUS Private Equity Society

2021–2024 **Research Fellow (Project Manager)**, *Institute of Operations Research and Analytics*, National University of Singapore.
- SIA-NUS Corp Lab
  - Project Manager for Transforming Competency and Skill Development using AI and Analytics (leading team of 3 PhD students and multiple Research Assistants)
- Collaborator of SGD1,000,000 grant with Institute of Mental Health on Screening and Invervention of Depression (Lead Machine Learning effort)
- Project Manager for Multiple Industry Projects with leading Global Medical Device Company
  - Quality Control
  - Text Analytics
  - Manages team of Research Assistants
- NUS GRIP Venture Hothouse participant

2020 **Visiting Research Student**, *Institute for Data, Systems, and Society*, Massachusetts Institute of Technology (MIT).

2020–2023 **Programme Leader**, *Emeritus Institute of Management*.
- Business Analytics for Strategic Decisions
- Python for Analytics

2017–2021 **PhD Candidate**, *Institute of Operations Research and Analytics*, National University of Singapore.
- Lead for Field Studies of Pilot training Project for a Major Airline Carrier
- Lead for Demand Modeling and Price Optimization Project for a Major Airline Carrier
- Lead for Forecasting Possible Quality Issues and Optimal Responses to the Forecasts for a Leading Global Medical Device Company
- Outstanding Graduate Student Teaching Award
- MSOM 2019 Conference and SIG Meeting Local Organising Committee
- Analytics for X Conference 2021 Local Organising Committee

2015–2017 **Graduate Research Student**, *Department of Mathematics*, Faculty of Science, National University of Singapore.
- Completed Training Programme for Teaching Assistants
- Achieved top 20% of all graduate tutors in teaching performance

2013–2015 **Lecturer**, *Mathematics and Statistics Division*, Temasek Polytechnic.
- Collaborated with NUS Pharmaceutical Science to create interactive webpages using HTML5 elements and Javascript
- Co-authored three textbooks
- Coordinated Online Student Evaluation of Teaching Effectiveness system for the School of Applied Science
- Subject Leader for the subject "Statistics for Applied Science"
- Completed Teaching in Higher Education Certificate
- Completed Data Analytics in Healthcare course
- Completed WSQ 3D Printing for Rapid Product Development course

2009 **Administrative Assistant**, *Office of Undergraduate Programmes*, NUS Faculty of Engineering.
  - Organizing Committee of Fourteenth National Undergraduate Research Opportunities Programme 2009
  - Coordinated Industrial Attachment and Vacation Internship Programme
  - Assisted with Student Exchange Programme

2008 **Defensive Computer Warfare/Information Assurance Platoon Commander**, *18C4 Unit*, Singapore Armed Forces, Lieutenant.
  - Managed and oversee the integrity of SAF's computer and network security
  - Coordinated the audit of Top Secret and Secret classified documents for all SAF Joint forces

Awards

2025 **National University of Singapore**, Annual Teaching Excellence Award.

2024 **National University of Singapore**, *NUS Business School*, NUS Business School Teaching Excellence Award 2024.

2023 **National University of Singapore**, *NUS Business School*, NUS Business School Teaching Excellence Award 2023.

2019 **National University of Singapore**, *Department of Analytics and Operations*, Outstanding Graduate Student Teaching Award.

2017 **National University of Singapore**, *Department of Mathematics*, Graduate Programme in Mathematics by Research, Letter of Commendation for Graduate Tutor.

2004 **Singapore Mathematical Olympiads**, *Senior Section*, Bronze Award.

Research Papers and Published Works

Accepted **Evaluating the Relative Predictive Validity of Measures of Self-Referential Processing for Depressive Symptom Severity**, *Tan, E. S. E., Tan, H. M., Fong, K. V., Ho, C. W., Teo, C., Tan, Z. Y., ... & Tan, G. C. Y. (2025)*, Frontiers in Psychiatry 15: 1463116., `https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2024.1463116/abstract`.

Textbook **Data-Driven Decision Making: Excel in Business Analytics**, *Hong Ming Tan, Yi-Liang Tung, Qizhang Liu (2025)*, Pearson Education.

Published Case **Toward Zero Waste: RecycleRight at the National University of Singapore**, *Hong Ming Tan, Karl Ann Too, Diyang Lin, Joel Goh (2024)*, Ivey Publishing.
One of four Ivey Publishing's must-read cases in 2024: `https://www.linkedin.com/posts/ivey-publishing_iveypublishingcases-wrapped2024-activity-7279149170500759553-7KjL/`

Published **EcoVal: An Efficient Data Valuation Framework for Machine Learning**, *Ayush Kumar Tarun, Bowei Chen, Hong Ming Tan, Vikram Singh Chundawat, Mohan Kankanhalli, Murari Mandal*, Proceedings of the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (pp. 2866-2875).

Published **Transdiagnostic Clustering of Self-Schema from Self-Referential Judgements identifies subtypes of healthy Personality and Depression**, *Tan, G. C. -Y., Wang, Z., Tan, E. S. E., Ong, R. J. M., Ooi, P. E., Lee, D., . . . Keppo, J. (2024)*, FRONTIERS IN NEUROINFORMATICS, 17, 19 pages. `http://doi.org/10.3389/fninf.2023.1244347`.

Published **Comparing feature selection and machine learning approaches for predicting CYP2D6 methylation from genetic variation**, *Fong, W. J., Tan, H. M., Garg, R., Teh, A. L., Pan, H., Gupta, V., . . . Tan, G. C. -Y. (2024)*, FRONTIERS IN NEUROINFORMATICS, 17, 16 pages. `http://doi.org/10.3389/fninf.2023.1244336`.

Published	**Evaluation of a New Antiresistic Strategy to Manage Antibiotic Resistance**, *Hong Ming Tan, Ambika C. Lall, Jussi Keppo, Swaine L. Chen (2023)*, Journal of Global Antimicrobial Resistance, Volume 33, 2023, Pages 368-375, ISSN 2213-7165.
Published Chapter	**The Case Method and Technology: Applying the Seven Principles for Good Practice in Undergraduate Education in a Business School Course**, *Tan, H. M. (2023)*, Designing Technology-Mediated Case Learning in Higher Education: A Global Perspective (pp. 17-31). Singapore: Springer Nature Singapore..
Published	**A modification to Pull the Goalie that takes into account the state of play: Coach Markov returns**, *Zaman, Z. and Tan, H. M. (2020)*, CHANCE, 33(1), 10-15.
Working Paper	**Risky Investments under Static and Dynamic Information Acquisition**, *Keppo, Jussi and Tan, Hong Ming and Zhou, Chao*, `https://ssrn.com/abstract=3141043`.
Working Paper	**Fare Ladder Optimization: Airline Revenue Management in Volatile Environment**, *Changchun Liu, Hong Ming Tan, Chung-Piaw Teo, Gang Guo, Yan Chen, Tim Lee*. **2023 CSAMSE Practice Award Finalist**
Working Paper	**Flying High with Improved Data: How an Instructor Training Workshop Boosting Pilot Competency Assessment**, *Qingyin Ge, Jussi Keppo, Chuan Hoo Tan, Hong Ming Tan*.
Working Paper	**Dynamic Pricing in the Airline Industry: Theory and Practice**, *Chung Khim Lae, Hong Ming Tan, Bar Light, Jussi Keppo*.
Working Paper	**Data Science Approach to Process Control**, *Yuda Ho, Jussi Keppo, Ek Hong Lim, Herman Tan, and Hong Ming Tan*.
Working Paper	**An Analytic Framework for Detecting Emerging Defects through Active Learning**, *Lu, B., Dong, Y., Ying, Y., Tan, H. and Keppo, J.*.

Academic Qualifications

2017–2021	**Ph.D. in Operations Research and Analytics**, *Institute of Operations Research and Analytics*, National University of Singapore.
2015–2017	**Master of Science by Research**, *Department of Mathematics*, Faculty of Science, National University of Singapore.
2009–2013	**Bachelor of Science(Hons)**, *National University of Singapore*, Second Class Honours, Upper Division.
	◦ Applied Mathematics (Primary Major)
	◦ Economics (Second Major)

Courses Taught

EMBA	**BME5201 Leading with Analytics**.
EMBA	**BME5202 Opportunities in AI**.
MBA	**BMA5275 Analytics in Mangerial Economics**.
MBA	**BMA5278 Business Insights through Industry Analysis**.
MSBA	**DBA5101 Analytics in Managerial Economics**.
MSc	**PHM5014 Causal Inference in Precision Medicine**.
MSc	**PHM5006 Ethics, Regulation and Managerial Economics In Precision Medicine**.
MSc	**Statistics Primer Workshops for MSc programs in Business School**.
MSBA	**Economics Bootcamp for MSc Business Analytics**.
Exec Ed	**AI for Leaders: Leveraging Data Analytics For Business**.
Exec Ed	**Leading with Big Data Analytics and Machine Learning**.

Exec Ed   **AI for Talent Management and Organizational Design**.

Exec Ed   **Enhancing Banking & Finance with AI: Business Analytics for Executives**.

Exec Ed   **General Management Programme**.

Exec Ed   **Saudi Aramco - NUS Advanced HR Development Programme**.

Exec Ed   **ISB-NUS Global Advanced Management Programme**.

Undergraduate   **DBA3803 Predictive Analytics in Business**.

Undergraduate   **DAO1704 Decision Analytics Using Spreadsheets**.

Undergraduate   **MA1101R Linear Algebra**.

Undergraduate   **MA1505 Mathematics I**.