

# Gerard Christopher Yeo

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## EXECUTIVE SUMMARY

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Ph.D. graduate in Data Science from the National University of Singapore with 2.5+ years of experience applying machine learning, statistical analysis, and predictive modeling in research and organizational settings. Skilled in analyzing complex numerical and unstructured datasets to extract actionable insights and drive strategic decision-making. Proficient in Python, R, and deep learning techniques, with a strong foundation in statistical analysis and AI-driven solutions. Expertise in Psychology, Cognitive Science, and Human Behavior, enabling a unique perspective on data interpretation and human-centered analytics. Adept at collaborating with cross-functional teams to understand business challenges and deliver innovative, data-driven solutions. Passionate about leveraging data science and AI to solve complex problems, optimize workflows, and enhance organizational success.

## TECHNICAL SKILLS

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<b>Computer Languages</b>	Proficient: Python, R Familiar: SQL
<b>Tech Stack</b>	LaTeX, Jupyter Notebook (Anaconda), HTML, CSS, Bash/Zsh, PyTorch, Scikit-learn, PySpark, Pandas, Dplyr, SPSS, matplotlib
<b>Domain Knowledge</b>	Machine Learning, Generative AI, Large Language Models (fine-tuning, prompt engineering, RAG), Deep Learning, Transformers, Psychology, Cognitive Science Multivariate Data Analysis, Big Data Analytics, Data Mining

## EDUCATION BACKGROUND

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<b>National University of Singapore</b>	Aug.2020–Sep.2024
<ul style="list-style-type: none"><li>– Degree: Ph.D. (Data Science)</li><li>– Major: Data Science</li><li>– GPA: 4.50/5.0 (First class)</li><li>– Main Advisor: Kokil Jaidka, Co Advisor: Mike Cheung Wai Leung, Ex Advisor: Desmond Ong</li><li>– Ph.D. Thesis: Cognitive Appraisals in First-Person Consumer Experiences and Third-Person Inferences.</li></ul>	
<b>National University of Singapore</b>	Aug.2013-May.2018
<ul style="list-style-type: none"><li>– Degree: Concurrent Degree Programme B.Soc.Sci (Hons) and M.Soc. Sci. in Psychology</li><li>– Major: Psychology</li><li>– GPA: 4.50/5.0</li><li>– Advisor: Ryan Hong</li><li>– Master Thesis: Looming Cognitive Style and Its Associations with Anxiety and Depression: A Meta-analysis.</li></ul>	

## WORK EXPERIENCE

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<b>Centre for Trusted Internet and Community, National University of Singapore</b> , Post-Doctoral Fellow Oct 2024-May 2025	
<ul style="list-style-type: none"><li>– <b>Main Project:</b> Comprehensively modeling consumers' trust in online information dissemination.</li><li>– Investigated psychological and social factors influencing consumer trust perception in digital environments.</li><li>– Designed a predictive framework (e.g. Neural Networks and Transformers) to analyze the impact of consumer trust on behaviors, including misinformation spread.</li></ul>	
<b>Community Psychology Hub</b> , Research Associate, Singapore.	May 2018-Aug 2020
<ul style="list-style-type: none"><li>– Commissioned by the Ministry of Social and Family Development (MSF), Singapore to conduct research and evaluate policy initiatives in the disability sector.</li></ul>	

- Developed and deployed predictive models (e.g., Support Vector Machines, Random Forest) to classify individuals with special needs into appropriate programs at a nationwide scale, leading to improved program alignment and enhanced engagement quality, as reported by stakeholders.
- Optimized resource allocation by leveraging large datasets to define decision cut-offs using predictive model decision boundaries, ensuring targeted interventions for people with special needs.
- Applied unsupervised learning techniques such as clustering to analyze patterns and gain insights into varying degrees of disabilities.
- Utilized explainable statistical models (e.g. Regression) to identify key factors influencing individuals with different disabilities, enhancing policy effectiveness.
- Collaborated with diverse stakeholders, including government agencies, to implement predictive models with a focus on fairness and representativeness.
- Led team training sessions on machine learning, statistical analysis, and R programming, enhancing technical proficiency and analytical capabilities.

**Singapore Prison Service, Ministry of Home Affairs**, Data Science Research Intern, Singapore. May 2017-Aug 2017

- Data Science Branch
- Conducted in-depth research on indicators of correctional success and predictors of re-offending to inform policy and program development.
- Utilized large datasets to apply data-driven feature selection techniques such as Recursive Feature Elimination (RFE), Random Forest, and Principal Component Analysis (PCA) to identify key features for predicting re-offending.
- Enhanced SPS's predictive models by integrating both theory- and data-driven features, improving the AUROC by 4% in predicting drug re-offending.

## TEACHING EXPERIENCE

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**Affective Computing (IS4152/5452), Teaching Assistant** Aug 2021-Dec 2021

- Department of Information Systems and Analytics, School of Computing, National University of Singapore
- Instructor: Desmond Ong
- Class Content: affect (e.g. emotions) detection in multi-modalities, generating affect in computers, simulating affect in computers, affective theory, psychological aspects of human-computer interaction (HCI).
- Responsibilities:
  - Grading assignments and exams
  - Led tutorials on key concepts in machine learning and statistical methods in the context of affective computing.
  - Conducted TA sessions and office hours, providing academic support to students.
  - Advised student group projects on conceptualization, data analysis, and methodology.

**Research and Statistical Methods I and II (PL2131 & PL2132), Teaching Assistant** Jul 2017-May 2018

- Department of Psychology, National University of Singapore
- Instructor: Tsai Fen-Fang; Sim Tick Ngee
- Class Content: Research methods in Psychology and various statistical methods such as General Linear Model, categorical data analysis, and Psychometrics
- Responsibilities:
  - Grading assignments and exams
  - Conducted tutorials on SPSS and statistical analyses
  - Provided consultation to students' group projects in terms of conceptualization and analyses.

## ACADEMIC PUBLICATIONS

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- (1) Tan, F., **Yeo, G.**, Jaidka, K., Furniturewala, S., Wu, F., Xu, W., Jain, V., Chadha, A., Liu, Y., Ng, S.K. (2025). PHAnToM: Persona-based Prompting Has An Effect on Theory-of-Mind Reasoning in Large Language Models. In *International AAAI Conference on Web and Social Media 2025*.

- (2) **Yeo, G.**, Jaidka, K. (2025). Understanding Annotator Perception: Modeling Psychological Inference from First- and Third-Person Annotation. In *39th Annual AAAI Conference 2025*.
- (3) **Yeo, G.**, Furniturewala, S., Jaidka, K. (2024). Beyond Text: Leveraging Multi-Task Learning and Cognitive Appraisal Theory for Post-purchase Intention Analysis. In *Findings of the Association for Computational Linguistics 2024*.
- (4) **Yeo, G. C.**, Ong, D. (2023). A meta-analytic review of the associations between cognitive appraisals and emotions in cognitive appraisal theory. *Psychological Bulletin*.
- (5) **Yeo, G. C.**, & Jaidka, K. (2023). The PEACE-Reviews dataset: Modeling Cognitive Appraisals in Emotion Text Analysis. In *Findings of the Association for Computational Linguistics: EMNLP 2023*.
- (6) **Yeo, G. C.**, & Jaidka, K. (2023). Analyzing language for insights into cognitive and social processes. In T. Reimer, L. van Swol., & A. Florack (Eds.), *The Routledge Handbook of Communication and Social Cognition*. Routledge/Taylor and Francis.
- (7) Lee, S. S., Keng, S. L., **Yeo, G. C.**, & Hong, R. Y. (2021). Parental invalidation and its associations with borderline personality disorder symptoms: A multivariate meta-analysis. *Personality Disorders: Theory, Research, and Treatment*.
- (8) **Yeo, G. C.**, Hong, R. Y., & Riskind, J. H. (2020). Looming cognitive style and its associations with anxiety and depression: A meta-analysis. *Cognitive Therapy and Research*, 44(3), 445-467.

## UNDER REVIEW

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- **Yeo, G. C.**, & Jaidka, K. (2025). Beyond Emotion Recognition to Reasoning: Using Contextual Cues and Cognitive Appraisals in Large Language Models. Submitted to *Association for Computational Linguistics 2025*
- Suresh, V., **Yeo, G. C.**, Ong, D. (2024). Critically examining the Domain Generalizability of Facial Expression Recognition models. Submitted to *Transactions on Affective Computing*.
- **Yeo, G.**, Cheung, W.L.M., Jaidka, K. (2024). How You Think Determines Whether You Will Buy- Relationships between Cognitive Appraisals, Emotions, and Behavioral Intentions in Consumption Contexts. Submitted to *Journal of Consumer Psychology*.

## RESEARCH WORKS IN PROGRESS

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- **Yeo, G. C.**, & Jaidka, K. (2024). Evaluation of Analogical Reasoning in Large Language Models.
- **Yeo, G. C.**, & Jaidka, K. (2025). Understanding Values Structure in Large Language Models Using Value Conflicts.
- **Yeo, G. C.**, & Tan, F. (2024). Personality and Persona Induction in Large Language Models and their Effects on Empathy.
- **Yeo, G. C.**, Jaidka, K., & Cheung, W. L. (2024). Third-Person Inferences of Product Reviews and Influence in Consumer Behavior.

## WORKSHOPS/CERTIFICATES

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**SICSS Singapore 2022 (The Summer Institute in Computational Social Science)** June.2022

- Content: ethics of computational social science, collecting digital trace data, text analysis, online experiments, social network analysis
- Project: Examining the turnover contagion of "leaving academia" on social media
  - Collected and processed text data by scraping Twitter using the Twitter API
  - Applied text and social network analysis to derive insights on user interactions and discourse patterns
  - Authored research proposals and delivered project presentations

## ADDITIONAL RESEARCH EXPERIENCE

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**Research Assistant**, Department of Psychology, National University of Singapore Jun 2017-Dec 2018

- Supervisor: Ryan Hong
- Study: **Cultural differences in situational perception**: part of an international collaboration to assess cultural differences in situational perception.

- Responsibilities: coordinate the recruitment of participants and administer questionnaires.

## ACADEMIC SERVICE

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### Organizing Committee:

- Singapore Symposium on Natural Language Processing 2023, 2024
- Summer Institute in Computational Social Science (SICSS) Singapore 2025

### Program Committee:

- The 31st International Conference on Computational Linguistics (COLING 2024)

### Ad Hoc Reviewer:

#### – Conferences:

*International Conference on Computational Social Science (IC2S2, 2024)*

*The Conference on Empirical Methods in Natural Language Processing (EMNLP, 2023, 2024)*

*the Annual Meeting of the Association for Computational Linguistics (ACL, 2024, 2025)*

## AWARDS/HONORS

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### NUS Graduate Student Teaching Awards (GSTA)

Dec 2018

- Received award for outstanding teaching for the undergraduate module PL2132- Research and Statistical Methods II

## SCHOLARSHIPS

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### President's Graduate Fellowship

Aug 2023- Aug 2024

- Amount: SGD \$5,500 (Around USD \$4,275) per month
- Institute of Data Science and the Integrative Sciences and Engineering Programme, NUS

### Data Science Scholarship

Aug 2020 - Aug 2023

- Amount: SGD \$3,600 (Around USD \$2,700) per month
- Institute of Data Science and the Integrative Sciences and Engineering Programme, NUS

## CO-CURRICULAR ACTIVITIES

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### Oasis Second Chance Animal Shelter (OSCAS), Director, Singapore.

Dec 2015-present

- Plan and implement directives for sustainability of the shelter
- Train and supervise new volunteers in animal welfare such as handling dogs, feeding, and cleaning the shelter.
- Rehabilitate fearful and inhibited dogs by administering behavioral methods based on psychological principles.
- Management of volunteers and implement policies and protocols for volunteers to adhere to.
- Plan, organize, and liaise with stakeholders for events of outreach, education, and fundraising to the public.
- Involvement in the Trap-Neuter-Release-Management Programme under the initiative of Animal and Veterinary Service (AVS) and NParks to reduce the stray population in Singapore in the long term.

### Institute of Mental Health, Volunteer, Singapore.

Jul 2017

### Kadir Boxing School, Trainee, Singapore.

Dec 2008-Dec 2013

- Trained under Mr. Syed Kadir, ex-South East Asia Games and Commonwealth Games Medalist
- Obtained silver in the 2009 Singapore Amateur Boxing Association Competition

### Project Calvary (Overseas Community Involvement Programme), Student, Singapore.

Dec 2009

- Led and spearheaded my team of classmates to organize and engage the children from the orphanage in Johor, Malaysia to participant in games and bonding activities