Jingyi Kenneth Tay

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EDUCATION

STANFORD UNIVERSITY | Ph.D. in Statistics
Expected Jun 2021 | Stanford, CA
Advisor: Robert Tibshirani.

PRINCETON UNIVERSITY | A.B. in Mathematics
Jun 2010 | Princeton, NJ
Summa Cum Laude • Certificates in Program of Applied & Computational Mathematics, Program of Finance
Senior Thesis Advisor: Ramon van Handel.
Junior Independent Work Advisor: Robert Calderbank.

WORK EXPERIENCE

A9.COM, AMAZON SEARCH | Applied Scientist Intern (Search Relevance)
Jun 2019 – Sep 2019 | Palo Alto, CA

- Conceptualized and constructed data pipelines for new, granular metrics for Amazon search relevance models. Processed ∼1B queries and ∼20B item responses to obtain dataset for predictive modeling.
- Built a model based on these pre-experiment metrics to predict performance on live customer traffic, so that experimental bandwidth can be allocated more efficiently. Model improved test performance metric by 20% over baseline.

STANFORD UNIVERSITY | Instructor & Teaching Assistant
Sep 2016 – Present | Stanford, CA

- Coached first-year statistics PhD students for qualification examination in applied statistics. 100% pass rate.
- Developed new material for and taught "Introduction to R" course for undergraduates 3 times. 94% of students described instruction of the course as "Excellent" or "Good".

INFOCOMM DEVELOPMENT AUTHORITY | Data Scientist (Data Science Division)
Oct 2015 – Aug 2016 | Singapore

- Spearheaded engagements with a wide array of government agencies (economic, transport, social) to analyze their data to support public policymaking. Responsibilities included project scoping, data cleaning, visualization, statistical analysis and presentation of results.
- Systematized and tested recruitment framework and materials for all roles in the division, including data scientist, quantitative strategist and front-end developer.
- Developed division's operating policy for data management and statistical disclosure control.

MINISTRY OF THE ENVIRONMENT & WATER RESOURCES | Assistant Director (Environmental Policy Division)
Sep 2013 – Sep 2015 | Singapore

- Drove progressive policies to ensure sustainability and efficiency of Singapore's waste management system.
- Evaluated usefulness of movement data in predicting spread of Chikungunya virus in Singapore.
- Chairman of Staff Well-Being Committee (Apr 2014 - Mar 2015): Led team of 10 officers in conceptualizing and executing activities to improve staff welfare and morale. Also managed and accounted for budget (20K+) for staff welfare.

MINISTRY OF DEFENSE | InfoComm Technologies Engineer
Apr 2012 - Aug 2013 | Singapore

- Evaluated operational performance of critical intelligence systems.
- Made performance more transparent by developing and implementing a new reporting dashboard for senior management.
- Strengthened in-house user adoption of systems through crafting and delivering technical presentations.

RESEARCH EXPERIENCE

PUBLICATIONS

- D. L. Shung, B. Au, R. A. Taylor, J. K. Tay, S. B. Laursen, A. J. Stanley, H. R. Dalton, J. Ngu, M. Schultz, and L. Laine. (2020). Validation of a machine learning model that outperforms clinical risk scoring systems for upper gastrointestinal bleeding. Gastroenterology, 2020, 158(1):160-7.

SOFTWARE

- Contributor to `glmnet` R package. Extended `glmnet` in v4.0 so that it can efficiently fit any generalized linear model with the elastic net penalty.

PREPRINTS AND PAPERS UNDER REVIEW

- D. Shung, E. Castro, J. Huang, J. K. Tay, M. Simonov, L. Laine, and S. Krishnaswamy. (2020). Neural network predicts need for red blood cell transfusion for patients with acute gastrointestinal bleeding admitted to the intensive care unit. medRxiv:10.1101/2020.05.19.20096743, 2020. URL https://www.medrxiv.org/content/10.1101/2020.05.19.20096743v1.
- J. K. Tay, and R. Tibshirani. (2019). Reluctant generalized additive modeling. arXiv:1912.01808 [stat.ME], 2019. URL https://arxiv.org/abs/1912.01808. R code https://CRAN.R-project.org/package=relgam.
- J. K. Tay, J. Friedman, and R. Tibshirani. (2018). Principal component-guided sparse regression. arXiv:1810.04651v3 [stat.ME], 2018. URL https://arxiv.org/abs/1810.04651. R code https://CRAN.R-project.org/package=pcLasso.
- J. K. Tay, and R. Tibshirani. (2018). A latent factor approach for prediction from multiple assays. arXiv:1807.05675 [stat.ME], 2018. URL https://arxiv.org/abs/1807.05675.

AWARDS & HONORS

- Honorable Mention, American Statistical Association's Statistical Learning and Data Science Student Paper Competition (2019)
- Departmental Teaching Assistant Award (2017, 2018)
- Two Sigma Graduate Fellowship in Statistics (2017)
- Early Induction to Phi Beta Kappa (top 1% of cohort) (2009)
- Shapiro Prize for Academic Excellence, Princeton University (2007, 2008)
- Honorable Mention, William Lowell Putnam Competition (2006, 2008)
- Public Service Commission Overseas Merit Scholarship (Open) (full-ride college scholarship) (2006-2010)
- Sliver Medal, International Mathematical Olympiad (2004, 2005)

COMPUTER SKILLS

Proficient in:
Python, R
Familiar with:
C, C++, FORTRAN, PySpark, SQL, Tableau