

Kevin Y.X. Wang

Statistician and Data Scientist

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Profile

Kevin is a research associate with a PhD in statistics from the University of Sydney in Australia. His main research interest lies in the use of statistics and bioinformatics to uncover expected patterns in health data to ultimately inform decision making. In his current role, his work focuses on statistical modelling of complex biological data and he provides consultations and analytical insights in various scientific fields. His specialisation in predictive modelling and applied statistical computation are applied broadly for data under any context. Kevin is a passionate and innovative data scientist and he loves talking with domain experts over whatever data problems they have on hand. His strong communication skills have been awarded with numerous prizes and scholarships throughout his career.

Experience

2019–2020 **Research Associate**, *University of Sydney*.

- Developed a clinically implementable prediction model using genomics data with clinicians and biologists.
- Developed and maintained open-sourced R software packages.
- Designed and hosted cloud-based workshops.

2016–2019 **Postgraduate Teaching Fellow**, *University of Sydney*.

- Authored lecturing materials for courses at both undergraduate and postgraduate level with strong positive student feedback.
- Delivered lectures (200+ students) and tutorials, covering 15 different courses, including statistics, mathematics and data science.
- Mentored and trained new statistics tutors.

2016 **Summer Research Scholar in Bioinformatics**, *Charles Perkins Centre*.

Research in data visualisation, focus on gene interaction networks for cancers (3 months)

2015 **Summer Research Scholar in Mathematical Statistics**, *Australian National University*.

Research in statistics, particularly on model selection and averaging techniques (3 months)

2013 **Research Internship in Mathematical Biology**, *Winston Charitable Foundation*.

Research in mathematical modelling of the spread of infectious parasites in beehives (2 months)

Education

2016–2020 **Doctor of Philosophy in Science**, *University of Sydney*.

- Research in statistics and bioinformatics.
- The PhD thesis develops methods to enable prediction of patient clinical outcomes using omics data under a rigorous statistical framework.

2012–2015 **Bachelor of Science (Adv. Mathematics) (Hon. I)**, *University of Sydney*.

- Major in statistics and financial mathematics.
- The Honours thesis examines the effect of different measures of association in human brain connectivity modelling utilising functional MRI data.

Skills

Applied statistics	Highly experienced at the research level. Specialisation in predictive modelling.
R & git	Highly proficient in scripting, tidyverse, shiny and package development with unit testing, continuous integration and coverage testing.
docker & Google Cloud	Proficient in building docker images and deployment through Google Cloud.
python & SQL	Working knowledge in writing basic scripts.

Volunteering

- 2016-2019 **Outreach volunteer**, *University of Sydney*.
Delivered seminars and hands-on workshops for visiting high school and university students.
- 2017 **President**, *Sydney University Mathematics Society*.
Oversaw finances of the Society, organised academic/industry events and negotiated corporate sponsorships for three years.
- 2015 **President**, *Sydney University Statistics Society*.
Organised academic/industry events and negotiating corporate sponsorships.

Awards

- 2019 **Statistical Society of Australia**, *JB Douglas Award (joint runner-up). Prize awarded to the top statistics research PhD students in New South Wales. AUD 250.*
- 2019 **Statistical Society of Australia**, *Golden Jubilee Travel Grant. Competitive funding for a statistics PhD student in Australia. AUD 1,000.*
- 2018 **Sydney Bioinformatics Research Symposium**, *Best poster student presentation at the conference. AUD 50.*
- 2017 **International Biometric Society - Australasian Region**, *Best student talk at the conference. AUD 500.*
- 2017 & 2018 **Australian Bioinformatics & Computational Biology Society**, *Travel scholarship to ABACBS annual conference. AUD 250.*
- 2016-2019 **Australian Postgraduate Award**, *For the duration of PhD program at the University of Sydney. AUD 26,288 p.a.*
- 2015 **International Biometric Society - Australasian Region**, *Awarded to the top biostatistics student undertaking a Honours program. AUD 1,500.*

Publications

- 1 Lin, C., **Wang, K. Y. X.**, & Mueller, S. **2020**. mcvis: A new framework for collinearity discovery, diagnostic and visualization. *Journal of Computational and Graphical Statistics*, In Press.
- 2 Hewavisenti, R., Ferguson, A., **Wang, K. Y. X.**, Jones, D., Gebhardt, T., Edwards, J., Zhang, M., Britton, W., Yang, J., Hong, A., & Palendira, U. (2020). CD103+ tumour-resident CD8+ T cell numbers underlie improved patient survival in oropharyngeal squamous cell carcinoma. *Journal for ImmunoTherapy of Cancer*, In Press
- 3 **Wang, K.Y.X.**, Tarr, G., Yang, J.Y.H., Mueller, S. **2019**. Fast and approximate exhaustive variable selection for generalised linear models with APES, Invited paper to *Australia & New Zealand Journal of Statistics*, 61 (4) 445-465.
- 4 Lin, Y., Ghazanfar, S., **Wang, K.Y.X.**, Gagnon-bartsch, J.A., Lo, K.K., Han, Z., Ormerod, J.T., Speed, T.P., Yang, P., Yang, J.Y.H. **2019**. scMerge: Leveraging factor analysis, stable expression and pseudo-replication to merge multiple single-cell RNA-seq data, *Proceedings of the National Academy of Sciences of the United States of America*, 116 (20) 9775-9784.
- 5 Pires da Silva, I., **Wang, K.Y.X.**, Wilmott, J.S., Holst, J., Carlino, M.S., Park, J.J., Quek, C., Wongchenko, M., Yan, Y., Mann, G., Johnson, D.B., McQuade, J.L., Rai, R., Kefford, R.F., Rizos, H., Scolyer, R.A., Yang, J.Y.H., Long, G. V, Menzies, A.M. **2019**. Distinct molecular profiles and immunotherapy treatment outcomes of V600E and V600K BRAF-mutant melanoma. *Clinical Cancer Research*, 25 (4) 1272-1279.
- 6 **Wang, K.Y.X.**, Menzies, A.M., Silva, I.P., Wilmott, J.S., Yan, Y., Wongchenko, M., Kefford, R.F., Scolyer, R.A., Long, G. V, Tarr, G., Mueller, S., Yang, J.Y.H. **2019**. bcGST - an interactive bias-correction method to identify over-represented gene-sets in boutique arrays. *Bioinformatics*, 35 (8) 1350-1357.
- 7 Strbenac, D., **Wang, K.Y.X.**, Wang, X., Dong, J., Mann, G.J., Mueller, S., Yang, J.Y.H. **2019**. Melanoma Explorer: a web application to allow easy reanalysis of publicly available and clinically-annotated melanoma omics datasets. *Melanoma Research*.

Presentations

- Workshop
- "Single-cell RNA-Seq analysis from beginning to end" at Hong Kong University (2019), Sydney University (2019) and Cornell University (2020).
 - "Enter the Tidyverse with R and RStudio" at BioinfoSummer (2019).
 - "Fast algorithms and modern visualisations for feature selection" at Joint International Society for Clinical Biostatistics and Australian Statistical Conference (2018).
- Talks
- 2019 International Conference on Econometrics and Statistics (invited)
 - 2019, 2017 International Biometrics Society - Australasian Region Conference
 - 2018 Australian Bioinformatics & Computational Biology Society Conference
 - 2018 Joint Statistical Meeting
 - 2017 International Conference in Robust Statistics
 - 2016 Australian Statistical Conference