

# Kevin Wang PhD

*Data Scientist and Statistician*

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Nationality: Australian

## Experience

- 2020–Now **Statistician**, *CSL Behring*, Melbourne, Australia.
- Establish new machine learning models and biostatistical protocols to address business challenges.
  - Liaising with internal clients to translate practical challenges to statistical analysis and towards final implementation and ultimately drive impact.
  - Providing statistical consultation services to guarantee high pharmaceutical production quality.
- 2019–2020 **Research Associate**, *University of Sydney*.
- Developed a clinically implementable prediction model using genomics data a team of 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*.
- Worked within a teaching team to author 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.

## 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.
  - Produced peer-reviewed articles with collaborators, covering a wide range of cancers, diseases and statistical topics.
- 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 and consulting level. Specialisation in inferential and predictive modelling.
- R & git Highly proficient in scripting, tidyverse, shiny and package development with unit testing, continuous integration and coverage testing. Author and maintainer of three open-source R packages.
- python & SQL Proficient in writing working scripts.

docker & Proficient in building docker images and deployment through Google Cloud.  
Google Cloud

## Volunteering

- 2021 **Deputy communication officer**, *Statistical Society of Australia (Victorian branch)*.  
Managing communications and organising events for the society.
- 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 negotiated corporate sponsorships.

## Scholarships & 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.
- 2016-2020 **Australian Postgraduate Award**, *For the duration of PhD program at the University of Sydney*. AUD 26,288 p.a.
- 2016 **Summer Research Scholar in Bioinformatics**, *Charles Perkins Centre*.  
Research in data visualisation, focus on gene interaction networks for cancers. AUD 2,400.
- 2015 **International Biometric Society - Australasian Region**, *Awarded to the top biostatistics student undertaking a Honours program*. AUD 1,500.
- 2015 **Summer Research Scholar in Mathematical Statistics**, *Australian National University*.  
Research in statistics, particularly on model selection and averaging techniques. AUD 3,000.
- 2013 **Research Internship in Mathematical Biology**, *Winston Charitable Foundation*.  
Research in mathematical modelling in the spread of infectious parasites in beehives. AUD 2,000.

## Publications

- 1 Kim J.H., **Wang, K. Y. X.**, Chen, C., Lin, Y., Tam, P.P.L., Lin, D.M., Yang, J.Y.H., & Yang, P. **2021**. Cepo uncovers cell identity through differential stability. (under review)
- 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*, 1-13.
- 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*, 8:e000452.
- 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*.

## Seminars

- 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