Damian Pavlyshyn | Statistician

CONTACT

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EDUCATION

Stanford University
PhD in Statistics
Thesis: *Likelihood ratio testing in critically-spiked Wigner models*
2017–2022

The University of Melbourne
MSc
Statistics and Stochastic Processes
2015–2016

BSc
Pure Mathematics
2012–2014

TECHNICAL SKILLS

- Extensive experience with statistical computation using software **R**, **Julia**, **Mathematica** and **MATLAB**, and database management using **SQL**.
- Experience creating data visualisation dashboards using **Shiny** and **Plotly**.
- Practical knowledge of general programming languages including **Python** and **Java**.
- Proficiency in **Git** version control system.

AWARDS

- ***Dwight Prize in Mathematics and Statistics:*** highest results in Statistics and Stochasic Processes in the Master of Science.
- ***Maurice Belz Scholarship in Statistics:*** academic merit among students pursuing a research project in Statistics and Stochastic Processes.
- ***Wyselaskie Scholarship in Mathematics:*** highest average grade among students enrolled in the Master of Science (Mathematics and Statistics.
- ***Inaugural Walter and Eliza Hall Institute UROP scholarship.***

WORK EXPERIENCE

Stanford University, Stanford, USA — 2017–2022
Highest-ranked statistics program worldwide

PhD candidate in statistics — 2017–2022

- Conducted research in theoretical statistics. My thesis topic was statistical testing in random matrix theory with a particular focus on high-dimensional models and covariance estimation.
- Worked on multidisciplinary projects in applied statistics, collaborating with researchers from diverse fields including genetics and history. Performed analysis in R and produced data visualisations and graphics for publication using ggplot2.
- Created and maintain the Julia package RandomMatrixDistributions.jl, which is registered in the Julia package library and features GitLab CI: (*github.com/damian-t-p/RandomMatrixDistributions.jl*).

Consultant: Stanford Statistical Consulting Service — 2018–2021

- Provided advice in experimental design, data analysis and model fitting for Stanford researchers and affiliates working in applied fields such as sociology and biomedical data science.

Course instructor and teaching assistant — 2017–2022

- Was the principal instructor for a class (STATS32: Introduction to R for undergraduates) about data analysis using the tidyverse R packages on the basis of a curriculum that I developed (*damian-t-p.github.io/STATS32-2020/*).
- Worked as a teaching assistant for statistics and ML classes from undergraduate to PhD level.
- Received 2019 Departmental Teaching Assistant Award for excellence in teaching.

G-Research, London, UK — 2019
Quantitative financial research and technology company

Quantitative research intern

- Integrated, cleaned and analysed a newly-acquired, extremely large financial dataset.
- Developed, implemented and tested/validated inferential and predictive machine learning models for this new dataset using Python packages including pandas and sk-learn.

Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia — 2013–2014
Biomedical research institute associated with the University of Melbourne

Undergraduate Research Opportunities student

- Provided statistical and computational support for an immunology lab.
- Developed software in MATLAB and Java that was used to analyse results published in J Marchingo et. al., "Antigen affinity, costimulation, and cytokine inputs sum linearly to amplify T cell expansion." In: *Science* 28 (2014), pp. 1123-27.

The University of Melbourne, Melbourne, Australia — 2013–2017
Group of Eight research university in Australia

Residential mathematics tutor: International House — 2016–2017

- Developed and implemented a curriculum of revision and extension tutorials that complemented the undergraduate mathematics courses of the University of Melbourne.

Teaching assistant — 2015–2017

- Ran tutorials and computer lab sessions for undergraduates in mathematics and statistics.

PUBLICATIONS

- I. M. Johnstone, Y. Klochkov, A. Onatski, and D. Pavlyshyn. "Spin Glass to Paramagnetic Transition in Spherical Sherrington-Kirkpatrick Model with Ferromagnetic Interaction." (2021). arXiv: 2104.07629.
- I. M. Johnstone, Y. Klochkov, A. Onatski, and D. Pavlyshyn. "An Edge CLT for the Log Determinant of Gaussian Ensembles." (2020). arXiv: 2011. 13723.
- D. Pavlyshyn, I. Johnstone and R. Saller. "Lead Pollution and the Roman Economy." In: *Journal of Roman Archaeology* 33 (2020), pp. 354-364.
- A. Kan, D. Pavlyshyn, J. Markham, M. R. Dowling, et. al. "Stochastic measurement models for quantifying lymphocyte response using flow cytometry." In: *PloS one* 11.1 (2016).