

Vincent Wolfgramm-Russell

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Tainui, Whakatohea, Te Aupouri, Tonga

New Zealand Born Citizen

Education

- 2019–Present **Doctor of Philosophy (PhD)**, *The University of Auckland*
Three-year research degree in Mathematics.
- 2018–2019 **Master of Science (MSc)**, *The University of Auckland*, A+
Research Masters in Applied Mathematics.
- 2017–2018 **Bachelor of Science (Honours)**, *The University of Auckland*, A+
Achieved First Class Honours in Applied Mathematics.
- 2014–2017 **Bachelor of Science (BSc)**, *The University of Auckland*, A to A+
Double major in Physics and Applied Mathematics.

Doctoral Thesis

- Title Nonstationary Bayesian Inverse Modelling of Aerosol Particle Size Distributions
- Supervisors Prof. Jari Kaipio and Dr. Ruanui Nicolson
- Description This thesis studies the state-of-the-art numerical and statistical methods to non-stationary inverse problems, with application to the simultaneous estimation of time-varying particle size distributions and their underlying dynamics.
- Key Skills State and parameter estimation, Bayesian and multivariate statistics, finite element analysis, matrix and vector calculus, multivariate linear algebra, non-linear partial differential equations, data simulation and analysis, deep learning.

Experience

- Mar 2016–
Present **Teaching and Graduate Teaching Assistant (Mathematics)**, *The University of Auckland*
Tutoring and marking over three hundred students in the undergraduate courses MATHS 108: General Mathematics 1, MATHS 150: Advancing Mathematics 1, MATHS 253: Advancing Mathematics 3, MATHS 260: Differential Equations, MATHS 270: Numerical Computing, MATHS 340: Real and Complex Calculus, MATHS 361: Partial Differential Equations, MATHS 362: Methods in Applied Mathematics, MATHS 363: Advanced Modelling and Computation, and the postgraduate course MATHS 766: Inverse Problems.
- Mar 2015–
Nov 2016 **Teaching Assistant (Physics)**, *The University of Auckland*
Tutoring and marking over three hundred students for the courses PHYSICS 120, 150: Advancing Physics 1, Advancing Physics 2, and PHYSICS 160: Physics for the Life Sciences, including lab demonstrating, and in the Physics Assistance Room.

Awards and Achievements

- 2017 **Certificate of Merit**, *Department of Mathematics, The University of Auckland*
For achieving A+ in MATHS 762: Nonlinear Partial Differential Equations, MATHS 763: Advance Partial Differential Equations, MATHS 766: Inverse Problems, MATHS 769: Stochastic Differential and Difference Equations, and MATHS 770: Advanced Numerical Analysis.
- First in Course Awards in MATHS 762 and MATHS 763: Nonlinear and Advanced Partial Differential Equations**, *Department of Mathematics, The University of Auckland*
- Collins Prize**, *Department of Mathematics, The University of Auckland*
Awarded annually to the student with the best overall result for a BSc (Honours) in Mathematics.
- 2016-2014 **Senior Scholar Award**, *Faculty of Science, The University of Auckland*
For graduating students obtaining the highest marks in their undergraduate programme.

Certificate of Merit, *Department of Mathematics, The University of Auckland*

For achieving A+ in MATHS 363: Advance Modelling and Computation, MATHS 362: Methods in Applied Mathematics, MATHS 270: Numerical Computation, MATHS 253: Advancing Mathematics 3, and MATHS 150: Advancing Mathematics 1.

First in Course Award in STATS 201: Data Analysis, *Department of Statistics, The University of Auckland*

Certificate of Outstanding Academic Achievement, *Department of Computer Science, The University of Auckland*

For achieving A+ in COMPSCI 101: Principles of Programming.

2013 **Dux Litterarum**, *One Tree Hill College, Auckland*

Annually awarded to the highest achieving student in their last year of high school.

Tainui Tertiary Education Scholarship, *Tainui, Waikato*

For being a tribal member studying full-time at a tertiary institution in New Zealand.

Conference Presentations

- Feb 2020 **Computational Physics Seminar**, *Department of Applied Physics, The University of Eastern Finland*
Oct 2019 **PhD Research Conference**, *Department of Mathematics, The University of Auckland*
Jul 2019 **New Zealand Workshop on Uncertainty Quantification**, *Department of Engineering Science, The University of Auckland*
Jun 2019 **Student Research Conference**, *Department of Mathematics, The University of Auckland*

Additional Skills

- Python Functional and object-oriented programming, with experience in implementing numerical and statistical methods and algorithms.
MATLAB Functional programming of numerical methods.
Unity Game development and other 3D projects, with experience in object-oriented programming using C#.
LaTeX Writing theses, mathematical reports and articles.
Git Basic experience in project management, documentation, and Github.
English Native speaker.
Mandarin Intermediate Level (HSK Level IV).

Additional Research

Summer 2016-2017

- Title Modelling the Movement of T-Cells by the Diffusion-Chemotaxis Equation
Supervisor Dr. Graham Donovan
Description Modelling the movement of T-Cells in the lymph nodes using a diffusion-chemotaxis equation.

Summer 2015-2016

- Title Nanofluidics and Dynamic Microfluidics - modelling and analysis
Supervisor Dr. Geoff Willmott
Description Modelling the movement of electrically charged micro- and nano-sized particles across a micro-sized conical pore.

References

Prof. Jari Kaipio

- Professor
- Department of Mathematics
- The University of Auckland
- j.kaipio@auckland.ac.nz

Dr. Ruanui Nicolson

- Lecturer
- Department of Engineering Science
- The University of Auckland
- ruanui.nicholson@auckland.ac.nz