

# Lindon Roberts

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## Research Interests

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Numerical optimization, particularly nonconvex and derivative-free optimization.

## Education

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<b>University of Oxford</b>	<b>Oxford, UK</b>
<i>Doctor of Philosophy (Mathematics)</i>	2015–(Sep 2019)
Thesis: Derivative-Free Algorithms for Nonlinear Optimization Problems	
Supervisors: Coralia Cartis (Oxford), Jan Fiala & Benjamin Marteau (Numerical Algorithms Group)	
EPSRC Centre for Doctoral Training in Industrially Focused Mathematical Modelling (InFoMM CDT)	
<b>Australian National University (ANU)</b>	<b>Canberra, Australia</b>
<i>Bachelor of Computational Science (Honours), 1st Class</i>	2008–2011
Thesis: Wavelet Methods for Variational Inequalities	
Supervisors: Markus Hegland, Dale Roberts (no relation), Stephen Roberts (no relation)	

## Funding

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EPSRC InFoMM CDT Studentship (fees + GBP14k/yr)	2015–(2019)
Honorary James Fairfax – Oxford Australia Scholarship (AUD1k/yr)	2015–(2019)
National Undergraduate Scholarship, ANU (AUD10k/yr)	2008–2011
Summer Research Scholarship, ANU (accom. + AUD1500)	2010
Vacation Research Scholarship, Aus. Mathematical Sciences Inst. (accom. + AUD1500)	2009

## Awards

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Departmental Teaching Award, Mathematical Institute, University of Oxford	2017
University Medal in Mathematics, ANU	2011
Hanna Neumann Prize for Mathematics IV Honours, ANU	2011
Boyapati Computer Science and Mathematics Award for Third Year, ANU	2010
Boyapati Computer Science and Mathematics Award for Second Year, ANU	2009
Boyapati Computer Science and Mathematics Award for First Year, ANU	2008

## Teaching

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University of Oxford.....	
<i>Continuous Optimization (MSc)</i>	2017
<i>Numerical Linear Algebra (4th year u/grad &amp; MSc)</i>	2016
Australian National University.....	
<i>PDE Methods &amp; Fourier Analysis (2nd year u/grad)</i>	2011
<i>Derivative Pricing &amp; Stochastic Calculus (3rd year u/grad)</i>	2011
<i>ODE Methods &amp; Vector Calculus (2nd year u/grad)</i>	2010 & 2011
<i>Calculus &amp; Linear Algebra (1st year u/grad)</i>	2010

## Professional Experience

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<b>Macquarie Group</b>	<b>Sydney, Australia</b>
<i>Associate/Analyst/Senior Analyst, Risk Management Group</i>	2012–2015
Member of Quantitative Applications Division, responsible for reviewing pricing and risk models. Maintained and developed Value-at-Risk model for market risk capital, including interacting with regulatory authorities.	

## Research Experience

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<b>Department of Mathematics, Australian National University</b>	<b>Canberra, Australia</b>
<i>Research Assistant</i>	2011–2012
Investigated growth of harmonic Bloch functions on lattices.	
<b>Fenner School of Environment, Australian National University</b>	<b>Canberra, Australia</b>
<i>Research Assistant</i>	2011
Modelled water flows through a catchment area to assist in broader project to improve farming practices.	
<b>Department of Mathematics, Australian National University</b>	<b>Canberra, Australia</b>
<i>Research Assistant</i>	2010
Extended tsunami- and flood-modelling software (ANUGA) to include kinematic viscosity.	

## Membership

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Society for Industrial and Applied Mathematics	2016–
Institute of Mathematics and its Applications	2016–

## Languages

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English (native), French (intermediate)

## Programming

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Python, MATLAB, C, C++, Fortran, R

## Publications

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- [1] **Lindon Roberts**, Ellen Nordgård-Hansen, Øyvind Mikkelsen, Sverre Anton Halvorsen and Robert A. Van Gorder, A heat and mass transfer study of carbon paste baking. *International Communications in Heat and Mass Transfer*, 88:9–19, 2017.

## Presentations

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- [1] Derivative-Free Optimisation Methods for Nonlinear Least-Squares Problems, *27th Biennial Numerical Analysis Conference (2017)*, University of Strathclyde. Joint work with Coralia Cartis, Jan Fiala and Benjamin Marteau.

## Study Groups

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- [1] Optimising the Design of Polythene Hydroponics Beds, *Agri-Food Study Group with Industry*, University of Bath, 2017.
- [2] Flow dynamics in complex buildings (airports and rail stations), *116th European Study Group with Industry*, University of Durham, 2016.