

# STUART BURRELL

Carnegie Scholar ◇ University of St Andrews ◇ United Kingdom

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**Phone**                 +44 7979 004965  
**Languages**           English, Basic German, Basic Japanese  
**Programming**       Python, R, Git/GitHub, GAP, Unix, LaTeX, Maple.

## EDUCATION

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<b>PhD, Mathematics</b> , <i>University of St Andrews</i> Fractal geometry, dynamical systems and dimension theory.	2017 - Present
<b>Scottish Mathematical Sciences Training Center</b> , Graduate courses in Algebra, Analysis, Topology, Probability and Statistics	2016 - 2018
<b>Academy for PhD Training in Statistics</b> , Graduate courses in Statistics at the Universities of Cambridge, Durham and Glasgow.	2016 - 2017
<b>Machine Learning Engineer Nanodegree</b> , <i>Udacity</i>	2016 - 2017
<b>MMath, Mathematics</b> , First Class Honours, GPA 4.0, <i>University of St Andrews</i>	2012 - 2016

## PUBLICATIONS

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<b>On the dimension and measure of inhomogeneous attractors</b> , arXiv <i>submitted.</i>	May 2018
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## SOFTWARE CONTRIBUTIONS

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<b>GAP Semigroups package</b> Methods to decide the order and torsion problems of natural and tropical matrix semigroups.	2016
<b>GAP Digraphs package</b> Methods for computing the simple circuits of a digraph.	2016

## EXPERIENCE

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<b>Research in Statistical Ecology and Machine Learning</b> <i>Centre for Research into Ecological and Environmental Modelling</i> , St Andrews.	2016-2017
<b>GAP Software Development</b> <i>School of Mathematics and Statistics</i> , <i>University of St Andrews</i> , St Andrews.	Summer 2016
<b>Laidlaw Internship in Research and Leadership</b> <i>School of Mathematics and Statistics</i> , <i>University of St Andrews</i> , St Andrews.	Summer 2015
<b>Undergraduate Research Summer School</b> <i>School of Mathematics and Statistics</i> , <i>University of St Andrews</i> , St Andrews.	Summer 2014

## AWARDS AND SCHOLARSHIPS

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<b>Carnegie PhD Scholarship</b>	2016-2020
<b>Duncan Prize</b> , <i>University of St Andrews</i>	2016
<b>Sanderson Prize</b> , <i>University of St Andrews</i>	2016
<b>The Arthur Hinton Read Memorial Prize</b> , <i>University of St Andrews</i>	2016
<b>ODSC Machine Learning/Deep Learning Scholarship</b>	2016
<b>IMA Graduate Prize Winner</b> , <i>Institute of Mathematics</i>	2016
<b>Graduate Medal in Mathematics</b> , <i>University of St Andrews</i>	2016
<b>The Principal's Scholarship for Academic Excellence</b> , <i>University of St Andrews</i>	2012-16
<b>The University Scholarship for Research and Leadership</b> , <i>University of St Andrews</i>	2015
<b>The Deans' List for Academic Excellence</b> , <i>University of St Andrews</i>	2012-16
<b>Gold Duke of Edinburgh Award</b>	2013

## TALKS

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<b>A brief note on the dimension of inhomogeneous attractors</b> <i>Dynamic Days Europe</i> , Loughborough.	September 2018
<b>A universal upper bound on the dimension of inhomogeneous attractors</b> <i>British Mathematical Colloquium</i> , St Andrews.	June 2018
<b>How big are inhomogeneous attractors?</b> <i>Edinburgh Mathematical Society PG Student Meeting</i> , The Burn, Glen Esk	May 2018
<b>On the dimension and measure of inhomogeneous attractors</b> <i>Pure Analysis Seminar</i> , St Andrews.	April 2018
<b>An introduction to inhomogeneous attractors</b> <i>Pure Postgraduate Seminar</i> , St Andrews.	April 2018
<b>Fractal geometry in nature and art</b> <i>The Royal Society of Edinburgh</i> , Edinburgh.	February 2018
<b>An introduction to iterated function systems</b> <i>Postgraduate Interdisciplinary Mathematical Symposium</i> , Glen Esk	February 2018
<b>Dimension of inhomogeneous self-conformal and self-affine sets</b> <i>School Research Day</i> , St Andrews.	January 2018
<b>Inhomogeneous attractors and upper box dimension</b> <i>Insitut Mittag-Leffer</i> , Stockholm, Sweden.	December 2017
<b>Trace contrast methods in acoustic space</b> <i>African Institute of Mathematical Sciences</i> , Cape Town, South Africa.	January 2017
<b>An introduction to trace contrast methods</b> <i>University of Cape Town</i> , Cape Town, South Africa.	January 2017
<b>Sequential Monte Carlo in population dynamics</b> <i>School of Mathematics and Statistics</i> , St Andrews.	April 2016
<b>Artificial intelligence and Gödel's incompleteness theorems</b> <i>School of Mathematics and Statistics</i> , St Andrews.	February 2015

## CONFERENCES

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<b>Fractals Geometry and Stochastics VI</b> <i>Evangelische Akademie Baden</i> , The Black Forest, Germany	October 2018
<b>CMI at 20</b> <i>Clay Mathematics Institute</i> , Oxford.	September 2018
<b>Dynamic Days Europe</b> <i>University of Loughborough</i> , Loughborough.	September 2018
<b>Thermodynamic Formalism in Dynamical Systems</b> <i>International Centre for Mathematical Sciences</i> , Edinburgh.	June 2018
<b>British Mathematical Colloquium</b> <i>University of St Andrews</i> , St Andrews.	June 2018
<b>Fractals and Dimensions</b> <i>Insitut Mittag-Leffler</i> , Stockholm, Sweden	December 2017
<b>ODSC (Machine Learning/Deep Learning)</b> London.	October 2016

## TEACHING

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<b>Mathematics and Statistics Tutor</b> , <i>CAPOD</i> , <i>University of St Andrews</i> ,	2016 - Present
<b>MT2502 Analysis</b> , <i>Tutor</i> , <i>University of St Andrews</i>	Autumn 2018
<b>MT1002 Mathematics</b> , <i>Tutor/Demonstrator</i> , <i>University of St Andrews</i>	Spring 2018
<b>MT1002 Mathematics</b> , <i>Tutor/Demonstrator</i> , <i>University of St Andrews</i>	Autumn 2017
<b>MT1003 Pure and Applied Mathematics</b> , <i>Tutor</i> , <i>University of St Andrews</i>	Spring 2017
<b>MT2508 Statistical Inference</b> , <i>Tutor</i> , <i>University of St Andrews</i>	Spring 2017
<b>MT2504 Combinatorics and Probability</b> , <i>Tutor/Demonstrator</i> , <i>University of St Andrews</i>	Autumn 2016

**WORKSHOPS**

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<b>Postgraduate Interdisciplinary Mathematical Symposium</b> <i>University of St Andrews, St Andrews</i>	January 2018
<b>Statistical Methods in Gibbon Conservation</b> <i>Centre for Research into Ecological and Environmental Modelling, St Andrews.</i>	August 2017
<b>Estimating Animal Abundance and Density using Acoustic Data</b> <i>University of Cape Town, Cape Town, South Africa.</i>	January 2017
<b>Scottish Mathematical Craining Center Symposium</b> Perth.	October 2016
<b>CoDiMa software carpentry</b> <i>International Centre for Mathematical Sciences, Edinburgh.</i>	October 2016
<b>Advanced PAMGuard</b> <i>PAMTech, Edinburgh.</i>	October 2016
<b>Spatial Capture-Recapture Methods</b> <i>Centre for Research into Ecological and Environmental Modelling, St Andrews.</i>	August 2016
<b>Laidlaw Leadership Program</b> <i>endorsed by the Institute of Management, St Andrews.</i>	2015

**PROFESSIONAL RESPONSIBILITIES**

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<b>Scottish Mathematical Sciences Training Centre Council, <i>Student Representative</i></b>	2016 - 2017
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