

# **LIAM STUART**

School of Mathematics and Statistics, University of St. Andrews, St. Andrews, KY16 9SS

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## **EDUCATION**

### **University of St. Andrews PhD 2019-Present**

I am currently studying for my PhD funded by the University of St. Andrews which is being supervised by Dr. Jonathan Fraser and Regius Professor Kenneth Falconer. My research is currently focused on fractal geometry, in particular the dimension spectra of limit sets of geometrically finite Kleinian groups and Julia sets of parabolic rational maps.

### **University of St. Andrews MMath Mathematics 2015-2019**

#### **First Class Honours Degree**

Modules included:

- Fractal Geometry (19.0)
- Real and Abstract Analysis (19.0)
- Lie Algebras (19.6)
- Groups (19.8)

Honours Average: 18.0

#### **Final Year Project (19.0): The Kakeya Problem and Related Conjectures:**

An exploration of the Kakeya conjecture, including partial results and a detailed look at analogues of the conjecture, also involving research into the methods used.

Supervisor: Dr. Jonathan Fraser

### **Open University 2013-2015**

Modules:

- Exploring Mathematics (Distinction)
- Pure Mathematics (Distinction)

### **Millburn Academy 2009-2015**

Advanced Highers: Mathematics (A), Chemistry (A), Physics (A)

## PUBLICATIONS

A new perspective on the Sullivan dictionary via Assouad type dimensions and spectra (with Jonathan M. Fraser). Preprint.

## WORK EXPERIENCE

### **Mathematics Tutor, School of Mathematics and Statistics, University of St. Andrews, Autumn 2019-Present**

I have currently done tutoring for the following modules at St. Andrews:

- MT2502 – Analysis
- MT2505 – Abstract Algebra

Student feedback regarding tutoring is divided into 4 categories

- The class/activity was well organised (organisation)
- The significance of the class/activity for the module was clear (significance)
- The material used in the class/activity was well explained (explanation)
- I was able to contact the staff member if I needed to (availability)

Each category is rated on a scale of 1-5, with 1 being the best.

	organisation	significance	explanation	availability
MT2502 (Autumn 2019)	1.5	1.61	1.39	1.33
MT2505 (Spring 2020)	-	-	-	-
MT2502 (Autumn 2020)	1.75	1.69	1.81	1.75

### **Teaching Assistant at Millburn Academy, May 2016- July 2016**

Duties included assisting students of various levels with their mathematical studies whilst being supervised by the classroom teachers.

Marked work of students during classroom periods.

## CONFERENCE/WORKSHOPS ATTENDED

- Postgraduate Interdisciplinary Mathematical Symposium (PIMS), The Burn (Edzell), UK, 29/1/20-31/2/20
- Fractals workshop, University of St. Andrews, 2/9/19

## TALKS GIVEN

- The Sullivan dictionary from the perspective of dimension theory: 06/10/20, University of St. Andrews, Analysis Seminar
- The Assouad spectrum of Kleinian limit sets: 25/02/20, University of St. Andrews, Analysis Seminar
- Kleinian Limits Sets: 17/02/20, University of St. Andrews, Pure Postgraduate Seminar
- Hyperbolic Geometry and Limit Sets: 23/01/20, University of St. Andrews, Research Day

**REVELANT SKILLS**

Computing Skills: LaTeX and Python mathematics software

Microsoft Office (Word, Powerpoint, Excel)