Christian **Bean**

Postdoctoral Student and Research Assisstant

Hverfisgata 72, 101 Reykjavík, Iceland

(+354) 7790340 | christianbean@ru.is

Education

Reykjavík University

Reykjavík, Iceland

PhD in Computer Science

Aug. 2014 - Present

- Supervisors: Prof H. Ulfarsson, Prof A. Claesson and Prof M. Albert
- Research Project: "Finding structure in sets of permutations" - *The main goal is to develop an algorithm which will aid researchers in finding structures in sets of permutations and use those structures to find generating functions to enumerate the set. My assignment is primarily the development of the theory of permutation patterns relating to the new algorithm as well as implementation of the algorithm.*
- Selected courses: Algorithms, Data Structures, Theory of Computation, Datamining and Machine Learning

Universtiy of St Andrews

Fife, Scotland

MMath (Hons) in Mathematics (1st Class)

Sep. 2010 - Jun. 2014

- Supervisor: Dr M. Quick
- Dissertation: "Powerful p-Groups" - *We will look into nilpotent groups and discover that all finite p-groups are nilpotent. We will look at powerful p-groups and explore their similarities with abelian p-groups. There will be a close look at the group $Ur(\mathbb{F}_p)$ in which we find its lower central series and show it is not powerful. We will show that all finite p-groups have a powerful normal subgroup whose index is bounded by a function of the group's rank and p.*
- Selected courses: Advanced Combinatorics, Semigroups, Topics in Groups, Finite Maths, Graph Theory, Symbolic Computation, Asymptotic Methods, Advanced Analytic Techniques, Numerical Analysis

Skills

Programming Python, LaTeX, Java, C++, Matlab, Maple

Languages English, French (self-teaching)

Teaching experience

Game Theory (E-409-LEIK)

Reykjavík University, Iceland

Teacher and organiser

Apr. 2017 - May. 2017

- This course was for B.Sc. and M.Sc. students in discrete mathematics and computer science

Cryptography and Number Theory (T-513-CRNU)

Reykjavík University, Iceland

Teacher and organiser

Aug. 2016 - Nov. 2016

- This course was for B.Sc. students in discrete mathematics and computer science

Algebra and Combinatorics (T-218-ALCO)

Reykjavík University, Iceland

Teaching assistant

Jan. 2016 - Apr. 2016

- This course was for B.Sc. students in discrete mathematics and computer science

Cryptography and Number Theory (T-513-CRNU)

Reykjavík University, Iceland

Teaching assistant

Aug. 2015 - Nov. 2015

- This course was for B.Sc. students in discrete mathematics and computer science

Algebra and Combinatorics (T-218-ALCO)

Reykjavík University, Iceland

Teaching assistant

Jan. 2015 - Apr. 2015

- This course was for B.Sc. students in discrete mathematics and computer science

Publications

Pattern avoiding permutations and independent sets in graphs

Joint work with M. Tannock and H. Ulfarsson

Preprint 2015

- http://arxiv.org/abs/1512.08155

Simultaneous Avoidance of a Vincular and a Covincular Pattern of Length 3

Joint work with A. Claesson and H. Ulfarsson

Preprint 2015

- http://arxiv.org/abs/1512.03226

Presentations and conferences

Young Researchers in Mathematics — *St Andrews, Scotland*
PRESENTED *"Struct: Finding structure in permutation sets"* — *Aug. 2016*

Permutation Patterns — *Washington, D.C, USA*
PRESENTED *"Struct: Finding structure in permutation sets"* — *Jun. 2016*

ICE-TCS Seminar — *Reykjavík, Iceland*
PRESENTED *"Struct: Finding structure in permutation sets"* — *May. 2016*

Scottish Combinatorics Meeting — *Glasgow, Scotland*
PRESENTED *"Struct: Finding structure in permutation sets"* — *Apr. 2016*

British Combinatorial Conference — *Warwick, England*
PRESENTED *"Avoiding a pair of vincular and covincular patterns"* — *Jul. 2015*

Permutation Patterns — *London, England*
PRESENTED *"Avoiding a pair of vincular and covincular patterns"* — *Jun. 2015*

Postgraduate Combinatorial Conference — *London, England*
PRESENTED *"Avoiding a pair of vincular and covincular patterns"* — *Apr. 2015*

ICE-TCS Seminar — *Reykjavík, Iceland*
PRESENTED *"Avoiding a pair of vincular and covincular patterns"* — *Feb. 2015*

Other duties

Referee work for journals

- Discrete Mathematics and Theoretical Computer Science: Special Issue for Permutation Patterns 2015

Review work

- MathSciNet