

# Jakub Sliáčan

Phone: +44(0)7981173337  
Email: jakub.sliacan@gmail.com  
Website: jakubsliacan.eu

## Education

Ph.D. Mathematics, The Open University	2015–2018
M.Phil. Mathematics, University of Warwick	2015
M.Sc. Applicable Mathematics, London School of Economics	2012
B.Sc. Mathematics, Jacobs University Bremen	2011

## Publications

- O. Pikhurko, J. Sliáčan, K. Tyros. **Strong forms of stability from flag algebra calculations**, to appear in *Journal of Combinatorial Theory, Series B*. [arxiv:1706.02612]
- J. Sliáčan, W. Stromquist. **Improved bounds on 4-point permutation packing densities**, *Discrete Mathematics and Theoretical Computer Science – Permutation Patterns 2016*, 19(2), 2018. [arxiv:1704.02959]
- R. Brignall, J. Sliáčan. **Juxtaposing Catalan permutation classes with monotone ones**, *Electronic Journal of Combinatorics*. 24(2), 2017. [arxiv:1611.05370]
- K. Bringmann, B. Doerr, A. Neumann, J. Sliáčan. **Online checkpointing with improved worst-case guarantees**. *Automata, Languages, and Programming – 40th International Colloquium, ICALP 2013, Proceedings, Part I*, 255–266, 2013. [arxiv:1302.4216]

## Employment, positions, visits

Postdoc, Umeå University, Sweden	2018–present
Visiting researcher, Umeå University, Sweden	Sep–Oct 2017
Assistant Engineer, Samsung Electronics, Suwon, South Korea <i>Set up a Kerberos based single sign-on environment for testing smart card authentication. Wrote a demo application for Samsung business printers that allows card authentication (proximity and smart cards) into the SSO environment.</i>	2013
Visiting researcher, Max-Planck Institut für Informatik, Saarbrücken, Germany	2012
Engineering Intern, Samsung Electronics, Suwon, South Korea	2012
Research assistant, Logistics Department, Jacobs University, Germany	2010–2012
Summer intern, Max-Planck Institut für Mathematik, Bonn, Germany	2010
Summer research student, Center for Research into Ecological and Environmental Modelling, University of St Andrews, UK	2010
Teaching assistant to Prof. Oswald, Dr. Mallahi-Karai, Prof. Pfander, Jacobs University	2010–2011
Research assistant to Dr. De Santis, Dr. Jeken, Jacobs University	2010–2011

## Programming

<i>Flagmatica</i> , <a href="https://bitbucket.org/jsliacan/flagmatica/src">https://bitbucket.org/jsliacan/flagmatica/src</a> , adaptive flag algebras demo (access on request)	2017
<i>Permpack</i> , <a href="https://github.com/jsliacan/permpack">jsliacan.github.io/permpack</a> , flag algebras for permutations	2016
<i>Flagmatic</i> , <a href="https://github.com/jsliacan/flagmatic">jsliacan.github.io/flagmatic</a> , added functionality	2013–2015
<i>Smart card authentication demo</i> , printer application for smart card authentication	2013
<i>Autonomous production simulation</i> , autonomous production processes in MATLAB	2010–2011
<i>Capture-recapture method simulation</i> , R simulation for abundance estimation method	2010
<i>Modified concept-shifting task (mCST) implementation</i> , psychological test in MATLAB	2010

## Talks

<i>Well-behaved <math>1 \times k</math> permutation grid classes</i> , Seminar 18541, Schloss Dagstuhl, Germany	2018
<i>Some <math>1 \times k</math> grid classes have algebraic generating functions</i> , Permutation Patterns, Hanover NH, US	2018
<i>Packing densities of small permutations</i> , Discrete Maths Seminar, Umeå, Sweden	2017
<i>Catalan permutation classes next to monotone ones</i> , 26th BCC, Glasgow, UK	2017
<i>Juxtaposing Catalan classes with monotone ones</i> , Permutation Patterns, Reykjavík, Iceland	2017
<i>Permutation packing densities</i> , Permutation Patterns, Washington DC, US	2016
<i>Flagmatic and Turán densities</i> , 25th BCC, Warwick, UK	2015
<i>Subgraph densities and Flag Algebras</i> , Postgraduate Combinatorial Conference, London, UK	2015
<i>Flagmatic package</i> , Short graduate student talk, University of Warwick, UK	2014
<i>Residual-based Gauss-Seidel methods</i> , Mittagseminar, Max-Planck Institut für Informatik, Germany	2012
<i>Residual-based Gauss-Seidel methods</i> , Graduate student talk, London Mathematical Society meeting, UK	2011
<i>Patterns in coefficient magnitudes in selected classes of cyclotomic polynomials</i> , Student talk, Jacobs University Bremen, Germany	2011

## Skills

Languages: Slovak (mother tongue), English (fluent), French (basic).

Other languages: Python (proficient), SageMath (proficient), C (proficient), MATLAB/Octave (proficient), Java (prior experience), Mathematica (prior experience), R (prior experience),  $\LaTeX$  (proficient).

## Awards, scholarships

Ph.D. studentship	2015–2018
ERC and EPSRC studentships for M.Phil. studies	2013–2015
Prize for ‘Best graduate student talk’, London Math. Soc.	2011
Scholarship, Jacobs University	2008–2011
President’s list for top 5% of the class, Jacobs University	2011
Summer research studentship, CREEM University of St Andrews	2010
Honorable mention, The Mathematical Contest in Modelling	2010
3rd prize, Slovak national debating competition	2008

## Conferences, seminars

Permutation Patterns, Hanover NH, US	7/2018
26th British Combinatorics Conference, Glasgow, UK	Jul 2017
Permutation Patterns, Reykjavík, Iceland	Jun 2017
Permutation Patterns, Washington DC, US	Jun 2016
25th British Combinatorics Conference, Warwick, UK	Jun 2015
Regularity and Analytic Methods in Combinatorics, LMS-CMI Research School, UK	Jul 2015
Postgraduate Combinatorics Conference, QMUL, London, UK	Apr 2015
ICMS workshop in extremal combinatorics, Edinburgh, UK	Jul 2014
Graph limits workshop, Budapest, Hungary	Jun 2014
Summer school: Graph limits, groups, and stochastic processes, Budapest, Hungary	Jul 2014
QMUL-Warwick combinatorics workshop, London, UK	Apr 2014
Winter school on algorithm design, Beroun, Czech Republic	Dec 2013
Workshop on Cycles and Colorings, Nový Smokovec, Slovakia	Sep2013

## Teaching

Mathematics undergraduate supervisions, University of Warwick, UK	Spring 2015
CS137 Discrete Mathematics and its Applications 2 (seminar), University of Warwick, UK	Spring 2015
CS245 Automata and Formal Languages (seminar), University of Warwick, UK	Spring 2015
CS260 Algorithms (seminar), University of Warwick, UK	Fall 2014
110111 Symbolic Software Lab, Jacobs University, Germany	Fall 2010
Math Support Center, Jacobs University, Germany	2010–2011