Bogdan Alecu

Personal Details

Name:	Bogdan Alecu
E-mail:	B.Alecu@warwick.ac.uk
Webpage:	https://warwick.ac.uk/fac/sci/maths/people/staff/alecu
Nationality:	Romanian
Date of birth:	09/12/1993

Education

University of Warwick — Coventry
Ph.D. in Mathematics, Advisor: Prof. Vadim Lozin — 2017–Current
  − Thesis: "A parametric approach to hereditary classes"

University of Warwick — Coventry
Master of Mathematics with Intercalated Year, 1st class (Hons) — 2011–2016
  − Thesis: "Special values of Rankin-Selberg convolution L-functions"
    Advisor: Prof. David Loeffler

Friedrich-Wilhelms-Universität Bonn — Bonn
Erasmus year — 2013–2014

Lycée Français Anna de Noailles — Bucharest
Baccalauréat S (18.42/20 average, with 20/20 in Mathematics) — 2008–2011

Publications and Preprints

[1] B. Alecu, V. Lozin, D. de Werra, and V. Zamaraev, "Letter graphs and geometric grid classes of permutations: Characterization and recognition", *Discrete Appl. Math.*, vol. 283, pp. 482–494, 2020.

[2] B. Alecu, M. Kanté, and V. Zamaraev, "Between clique-width and linear clique-width of bipartite graphs", *Discrete Math.*, vol. 343, no. 8, 2020, Article 111926.

[3] B. Alecu, A. Atminas, and V. Lozin, "Graph functionality", *J. Combin. Theory B*, vol. 147, pp. 139–158, 2021.

[4] B. Alecu, A. Atminas, V. Lozin, and V. Zamaraev, "Graph classes with linear Ramsey numbers", *Discrete Math.*, vol. 344, no. 4, 2021, Article 112307.

[5] B. Alecu, V. Lozin, and D. de Werra, "The micro-world of cographs", *Discrete Appl. Math.*, Submitted, Extended abstract available at https://doi.org/10.1007/978-3-030-48966-3_3.

[6] B. Alecu, V. Lozin, and D. Malyshev, "Critical properties of bipartite permutation graphs", *European J. Combin.*, Submitted, Preprint available at https://arxiv.org/abs/2010.14467.

[7] B. Alecu, A. Atminas, V. Lozin, and D. Malyshev, "Combinatorics and algorithms for quasi-chain graphs", 2021, Preprint available at https://arxiv.org/abs/2104.04471.

[8] B. Alecu, R. Ferguson, M. Kanté, V. Lozin, V. Vatter, and V. Zamaraev, "Letter graphs and geometric grid classes of permutations", *J. Combin. Theory B*, Submitted, Preprint available at https://arxiv.org/abs/2107.03447.

[9] B. Alecu, R. Ferguson, M. Kanté, V. Lozin, V. Vatter, and V. Zamaraev, "Lettericity: An FPT algorithm and a bound on the size of obstructions", 2021, Upcoming preprint.

[10] B. Alecu, V. E. Alekseev, A. Atminas, V. Lozin, and V. Zamaraev, "Graph parameters, implicit representations and factorial properties", 2021, Upcoming preprint.

[11] B. Alecu, V. Lozin, D. Quiroz, R. Rabinovich, I. Razgon, and V. Zamaraev, "On gluing two trees together", 2021, Upcoming preprint.

[12] B. Alecu and V. Lozin, "Understanding lettericity I: a structural hierarchy", 2021, Preprint available at https://arxiv.org/abs/2106.03267.

TEACHING

- **Teaching Assistant** at the University of Warwick   March 2019 and 2020
  Graded student talks for Algorithmic Graph Theory (CS254).

- **Supervisor** at the University of Warwick   2015–2019
  Supervisions consist of grading the work of groups of five first or second-year undergraduate students, and meeting with them weekly to give them feedback and discuss the material.

- **Teaching Assistant** at the University of Warwick   Autumn 2019
  Ran Support Classes for Discrete Mathematics and its Applications 1 (CS136).

- **One-to-one support** at the University of Warwick   Autumn 2018
  Weekly one-to-one meetings with students in difficulty.

- **Teaching Assistant** at the University of Warwick   Autumn 2017
  Ran support classes for Graph Theory (MA4J3).

TALKS

British Combinatorial Conference	July 2021
"Between Monotone and Geometric Griddability of Permutation Classes and Beyond"	Online
Permutation Patterns	June 2021
"Universal 321-avoiding permutations"	Online
Karlsruhe Institute of Technology Discrete Mathematics Seminar	April 2021
"Minimal classes of unbounded lettericity"	Online
International Workshop on Combinatorial Algorithms	June 2020
"The micro-world of cographs"	Online
Warwick Mathematics Postgraduate Seminar	November 2019
"Geometric griddability of permutation classes"	Coventry
British Combinatorial Conference	August 2019
"Graph functionality"	Birmingham
45th International Workshop on Graph-Theoretic Concepts in Computer Science	June 2019
"Graph functionality"	Vall de Núria

LANGUAGES

- **Romanian:** native
- **English:** fluent
- **French:** fluent
- **German:** advanced
- **Italian:** basic

PROGRAMMING

Basic knowledge in:

- **Java**
- **C**
- **Sage**
- **MAGMA**

Scholarships and Awards

Engineering and Physical Sciences Research Council Doctoral Award 2017–2021
Funding to undertake a PhD in Mathematics at the University of Warwick

Undergraduate Research Scholarship Scheme July 2015
Awarded £1000 for a summer research project with Dr Dmitriy Rumynin

Erasmus grant 2013–2014
Funding to undertake a year of study abroad

Research Interests

Most of my interests lie in the area of combinatorics. They include graph theory (structural, algebraic, algorithmic and extremal), permutation patterns, and various enumerative topics. I am also interested in the interplay between combinatorics and other areas of mathematics, notably topology, group theory and number theory.

Hobbies and Personal Interests

My hobbies include playing the piano, indoors bouldering, as well as playing strategy and social deduction-based games with other people. I also enjoy browsing through textbooks from various areas of mathematics in my free time.