Žaneta Semanišinová

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Personal data

Born November 16, 1997
Nationality Slovak

Education

Technische Universität Dresden — Dresden, Germany
PhD in Mathematics (subject area *Algebra and Discrete Structures*) — 2021–Current
- supervisor Manuel Bodirsky

Charles University — Prague, Czech Republic
Master in Pure Mathematics (program *Mathematical Structures*) — 2019–2021
- summa cum laude
- thesis: Higher commutators in loop theory (supervisor David Stanovský)

Charles University — Prague, Czech Republic
Bachelor in Mathematics (program *General Mathematics*) — 2016–2019
- summa cum laude
- thesis: Enumeration of affine quasigroups (supervisor David Stanovský)

Publications

[1] M. Bodirsky, É. Bonnet, and **Ž. Semanišinová**, "Temporal valued constrainst satisfaction problems", submitted, available at https://arxiv.org/abs/2409.07285.

[2] M. Bodirsky, P. Jonsson, B. Martin, A. Mottet, and **Ž. Semanišinová**, "Complexity classification transfer for CSPs via algebraic products", *SIAM Journal on Computing*, vol. 53, no. 5, pp. 1293–1353, 2024. eprint: https://doi.org/10.1137/22M1534304.

[3] M. Bodirsky, **Ž. Semanišinová**, and C. Lutz, "The complexity of resilience problems via valued constraint satisfaction problems", in *Proceedings of the 39th Annual ACM/IEEE Symposium on Logic in Computer Science*, ser. LICS '24, Tallinn, Estonia: Association for Computing Machinery, 2024, ISBN: 9798400706608.

[4] J. Rydval, **Ž. Semanišinová**, and M. Wrona, "Identifying Tractable Quantified Temporal Constraints Within Ord-Horn", in *51st International Colloquium on Automata, Languages, and Programming (ICALP 2024)*, ser. Leibniz International Proceedings in Informatics (LIPIcs), vol. 297, Dagstuhl, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2024, 151:1–151:20, ISBN: 978-3-95977-322-5.

[5] **Ž. Semanišinová** and D. Stanovský, "Three concepts of nilpotence in loops", *Results Math.*, vol. 78, no. 4, Paper No. 119, 15, 2023.

[6] **Ž. Semanišinová**, "Paramedial quasigroups of prime and prime square order", *Journal of Algebra and its Applications*, vol. 21, no. 12, 2022.

Conference and seminar talks

1. *The Complexity of Resilience Problems via Valued Constraint Satisfaction Problems*, LICS'24, Tallinn, Estonia, July 2024
2. *Classification Transfer for CSPs via Algebraic Products*, Women in Logic, Tallinn, Estonia, July 2024
3. *Identifying Tractable Quantified Temporal Constraints*, Trends in Arithmetic Theories, Tallinn, Estonia, July 2024 (invited talk)
4. *Identifying Tractable Quantified Temporal Constraints within Ord-Horn*, AAA105, Prague, Czech Republic, May/June 2024
5. *Constraint satisfaction problems: an algebraic approach to classifying computational complexity*, Algebra seminar at Pavol Jozef Šafárik University, Košice, Slovakia, February 2024
6. *Valued Constraint Satisfaction Problem and Resilience in Database Theory*, Combinatorial Problems in Model Theory and Computer Science, Leeds, United Kingdom, November 2023 (invited talk)
7. *Valued Constraint Satisfaction Problem and Resilience in Database Theory*, Algebra week, Siena, Italy, July 2023 (invited talk)
8. *Valued Constraint Satisfaction Problem and Resilience in Database Theory*, AAA103, Tartu, Estonia, June 2023
9. *Valued Constraint Satisfaction Problem and Resilience in Database Theory*, Spring school of the Department of Algebra, Železnice, Czech Republic, March 2023
10. *Complexity Classification Transfer for CSPs via Algebraic Products*, PALS, online, January 2023
11. *Constraint Satisfaction Problems of First-Order Expansions of Algebraic Products*, CWC 2022, Italy, Molveno, September 2022
12. *Constraint Satisfaction Problems of First-Order Expansions of Algebraic Products*, AAA102, Szeged, Hungary, June 2022
13. *Constraint Satisfaction Problems of First-Order Expansions of Algebraic Products*, Spring school of the Department of Algebra, Lomnice nad Popelkou, Czech Republic, May 2022
14. *Paramedial quasigroups of prime and prime square order*, Fall school of the Department of Algebra, Telecí, Czech Republic, November 2021
15. *Supernilpotent loops*, International Seminar of the Institute of Algebra, Dresden, Germany, October 2021
16. *Paramedial quasigroups of prime and prime square order*, LOOPS 2019, Budapest, Hungary, July 2019

Teaching

- **exercise session** at the TU Dresden — Winter 2022/2023
  Discrete Structures
  - in English
- **exercise sessions** at the Charles University — Summer 2020, 2021
  Number Theory (NMMB206)

Scholarships and Awards

- 2nd place in SVOČ (university students research competition) 2021
- Dean's Teaching Award 2020
- Student Faculty Grant January–May 2020
- merit scholarship 2017, 2018, 2019, 2020
- honourable mention from the International Mathematical Modeling Challenge 2015, 2016
- participation at the national round of the Mathematical Olympiad 2015, 2016

Experience

Charles University Prague, Czech Republic
investigator 2020–2021

- Formalization of Combinatorics on Words (GAČR grant)
- The aim of the project is to formalize basics of the known theory of combinatorics on words in the proof assistant Isabelle. My work mostly consisted of writing and revising lemmas, theorems and proofs in order to make them compact and useful for the rest of the theory.

Pavol Jozef Šafárik University Košice, Slovakia
organizer of educational activities for talented students 2017–2021

- IT Academy – education for the 21st century (national project from ESIF)
- The aim of the project is innovation of education of elementary and high school students in the field of computer science, information technologies, mathematics and another STEM subjects. My responsibility was organization of mathematical competitions and camps, which improve mathematical skills and knowledge and stimulate students' interest in mathematics.

Extracurricular Activities

- Volunteer in the Association STROM 2012–Current
  - I organize mathematical competitions such as correspondence seminars or team competitions and mathematical camps for students of elementary and high schools. In 2020-2022, I was the coordinator of the seminar STROM for high school students.
- Regional coordinator in the Slovak Debate Association 2014–2015
  - I was one of the main organizers of regional tournaments in debating for elementary school students, responsible for organizational and professional aspects of the tournaments.

Skills

- **Programming languages:** Pascal, C# (basics)
- **Automated theorem proving:** Isabelle/HOL

Languages

- **English:** fluent
- **German:** intermediate
- **Spanish:** elementary
- **Czech:** fluent
- **Slovak:** native