

## PERSONAL DATA

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**Born** November 16, 1997  
**Nationality** Slovak

## EDUCATION

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<b>Technische Universität Dresden</b> PhD in Mathematics (subject area <i>Algebra and Discrete Structures</i> ) – supervisor Manuel Bodirsky	Dresden, Germany 2021–Current
<b>Charles University</b> Master in Pure Mathematics (program <i>Mathematical Structures</i> ) – summa cum laude – thesis: Higher commutators in loop theory (supervisor David Stanovský)	Prague, Czech Republic 2019–2021
<b>Charles University</b> Bachelor in Mathematics (program <i>General Mathematics</i> ) – summa cum laude – thesis: Enumeration of affine quasigroups (supervisor David Stanovský)	Prague, Czech Republic 2016–2019

## PUBLICATIONS

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- [1] M. Bodirsky, P. Jonsson, B. Martin, A. Mottet, and **Ž. Semanišínová**, “Complexity classification transfer for CSPs via algebraic products”, submitted, available at <https://arxiv.org/abs/2211.03340>.
- [2] M. Bodirsky, **Ž. Semanišínová**, and C. Lutz, “The complexity of resilience problems via valued constraint satisfaction problems”, submitted, available at <https://arxiv.org/abs/2309.15654>.
- [3] J. Rydval, **Ž. Semanišínová**, and M. Wrona, “Identifying tractable quantified temporal constraints within Ord-Horn”, submitted, available at <https://arxiv.org/abs/2402.09187>.
- [4] **Ž. Semanišínová** and D. Stanovský, “Three concepts of nilpotence in loops”, *Results Math.*, vol. 78, no. 4, Paper No. 119, 15, 2023.
- [5] **Ž. Semanišínová**, “Paramedial quasigroups of prime and prime square order”, *Journal of Algebra and its Applications*, vol. 21, no. 12, 2022.

## CONFERENCE AND SEMINAR TALKS

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1. *Constraint satisfaction problems: an algebraic approach to classifying computational complexity*, Algebra seminar at Pavol Jozef Šafárik University, Košice, Slovakia, February 2024
2. *Valued Constraint Satisfaction Problem and Resilience in Database Theory*, Combinatorial Problems in Model Theory and Computer Science, Leeds, United Kingdom, November 2023 (invited talk)
3. *Valued Constraint Satisfaction Problem and Resilience in Database Theory*, Algebra week, Siena, Italy, July 2023 (invited talk)
4. *Valued Constraint Satisfaction Problem and Resilience in Database Theory*, AAA103, Tartu, Estonia, June 2023

5. *Valued Constraint Satisfaction Problem and Resilience in Database Theory*, Spring school of the Department of Algebra, Železnice, Czech Republic, March 2023
6. *Complexity Classification Transfer for CSPs via Algebraic Products*, PALS, online, January 2023
7. *Constraint Satisfaction Problems of First-Order Expansions of Algebraic Products*, CWC 2022, Italy, Molveno, September 2022
8. *Constraint Satisfaction Problems of First-Order Expansions of Algebraic Products*, AAA102, Szeged, Hungary, June 2022
9. *Constraint Satisfaction Problems of First-Order Expansions of Algebraic Products*, Spring school of the Department of Algebra, Lomnice nad Popelkou, Czech Republic, May 2022
10. *Paramedial quasigroups of prime and prime square order*, Fall school of the Department of Algebra, Telecí, Czech Republic, November 2021
11. *Supernilpotent loops*, International Seminar of the Institute of Algebra, Dresden, Germany, October 2021
12. *Paramedial quasigroups of prime and prime square order*, LOOPS 2019, Budapest, Hungary, July 2019

## TEACHING

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- **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

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- 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

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### Charles University

investigator

Prague, Czech Republic

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

organizer of educational activities for talented students

Košice, Slovakia

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

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- 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

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

## LANGUAGES

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