



Filip Filipi

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Education

University of Bonn

PhD in Mathematics

Bonn, Germany

2025–Current

- **Topic:** Algebraic Methods in Extremal Combinatorics (Advisor: Prof. Dr. Lisa Sauermann)

Charles University

Master in Pure Mathematics (Mathematical Structures)

Prague, Czech Republic

2023–2025

- Summa cum Laude (Perfect average mark 1.00)
- **Thesis:** *Graph covers* (Advisor: prof. RNDr. Jan Kratochvíl, CSc.)
 - Study of the existence of generalized snarks, defined as simple graphs that cover a given multigraph (with possible loops and semi-edges) and do not cover another one
 - Contribution to a related conjecture of Bok, Fiala, Jedličková, Kratochvíl, and Seifrtová (2022)
 - Dean's Prize for the best master's thesis of the year (Mathematics)
- **Selected courses:** Algebraic Geometry, Algebraic Topology, Automata and Computational Complexity, Categories of Modules and Homological Algebra, Combinatorial Group Theory, Combinatorics, Group Representations, Lattice Theory, Linear Algebra Applications in Combinatorics, Riemannian Geometry, Representation Theory of Finite-Dimensional Algebras, The Theory of Groups, Universal Algebra

Charles University

Bachelor in Mathematics (General Mathematics)

Prague, Czech Republic

2020–2023

- Summa cum Laude (Perfect average mark 1.00)
- **Thesis:** *Cycles in translations in connected quandles* (Advisor: doc. RNDr. David Stanovský, Ph.D.)
 - Contribution to Hayashi conjecture (2013)

SPŠE a VOŠ Pardubice

Technical High School Diploma in Electrical Engineering (Telecommunication)

Pardubice, Czech Republic

2016–2020

- Passed with honors (Perfect average mark 1.00)

Publications

Journal papers

Conference papers

- **Filip Filipi, Jan Kratochvíl, and Roman Nedela:**
Generalized Snarks, Disjoint Perfect Matchings, and Graph Covers.
In 51st International Symposium on Mathematical Foundations of Computer Science (MFCS 2026).
Leibniz International Proceedings in Informatics (LIPIcs), Volume 386, pp. 45:1-45:17, Schloss Dagstuhl –
Leibniz-Zentrum für Informatik (2026), <https://doi.org/10.4230/LIPIcs.MFCS.2026.45>

Preprints

- **Filip Filipi:**
Hayashi Property for Conjugation Quandles.
<https://arxiv.org/abs/2503.22377>

Extended abstracts.....

○ Filip Filipi:

Simple Graph Covers of Dipoles with Loops.

European Conference on Combinatorics, Graph Theory and Applications (Eurocomb 2025), Booklet of extended abstracts, pp. 445–449, <https://nextcloud.renyi.hu/index.php/s/TdjSmNjDjrQEH2X>

Conferences, Forums, and Workshops

Contributed talks.....

- **51st International Symposium on Mathematical Foundations of Computer Science (51st MFCS)**, 2026, Paris, France, <https://mfcs2026.irif.fr/index.html>
- **Midsummer Combinatorial Workshop XXXI (MCW 2026)**, Prague, Czech Republic, <https://www.mff.cuni.cz/en/kam/events/mcw/mcw-2026>
- **106. Arbeitstagung Allgemeine Algebra (AAA106)**, 2025, Olomouc, Czech Republic, <https://aaa106.framer.website/>

Posters.....

- **13th European Conference on Combinatorics, Graph Theory and Applications (Eurocomb'25)**, Budapest, Hungary, <https://eurocomb25.renyi.hu/>
- **Discrete Mathematics Days 2026 (DMD'26)**, Granada, Spain, <https://dam-network.github.io/dmd2026/>

Attendance.....

- **Young Researchers Forum (YRF 2026)**, Paris, France, <https://mfcs2026.irif.fr/index.html#yrf>
- **12th Heidelberg Laureate Forum (12th HLF 2025)**, Heidelberg, Germany, <https://www.heidelberg-laureate-forum.org/>

Teaching

University of Bonn

Assistant examiner at oral exams for Computability lecture series

2026

Charles University

Exercise sessions for Linear Algebra I and II

2023–2025

- Taught 4 classes with 80 students in total. Assisted with written examinations
- Dean's Prize for achieving one of the best student evaluations among mathematics teachers (2024/25)

Scholarships and Awards

2025: Dean's Prize for the best master's thesis of the year (Mathematics)

2025: Dean's Prize for achieving one of the best student evaluations among mathematics teachers (2024/25)

2025: 1st place in SVOČ research competition for the results of my master's thesis (student competition organized by Czech and Slovak mathematical societies)

2024: 3rd place in SVOČ research competition for the results of my bachelor's thesis (student competition organized by Czech and Slovak mathematical societies)

2022: Partial mobility grant within Bachelor in Mathematics Student Task project (visit of online project mentor at Sorbonne University, Paris)

2020: 1st prize in Incentive Program of Prokop Diviš for high school students for the best study results and school representation

2020: Member of one of the 10 winning teams of ESA's European Astro Pi Challenge: Mission Space Lab

Work experience

Labor, Management, Know-how development | 2022–2025: Solar power plants construction and its opti-

mization (Netherlands)

Webpage design | 2019–2025: mitesport.cz, trenerkarate.cz, wellness-pardubice.cz

Programming | 2018–2025: Yamato Cup Karate Tournament organizer desktop app development

Skills

Math software: Mathematica

Programming languages: Python, C# (basics), java (basics)

Other: Holder of a Czech authorization for independent work on low-voltage electrical installations and a VOL-VCA certificate for project management and supervising the safety of work in the Netherlands

Extracurricular Activities

2024–2025: Technical official at the Yamato Cup Karate Tournament, a quarterly event in Pardubice.

2019–2023: Karate competitions referee

2021: 3rd place in World Shotokan Karate Championships, Istanbul

2020: Black belt in karate

2019: 1st place in European Shotokan Karate Championships, Skopje

2019: 2nd place in World Shotokan Karate Championships, Bucharest

2018–2021: Karate Instructor at Karate Lions Pardubice z.s.

2016–2020: Karate promotions and exhibitions

Languages

Czech: Native

English: Fluent, IELTS Academic Band Score 7.5 (2025)