Bartosz Bednarczyk

<div align="right">Academic Curriculum Vitæ</div>

ORCID: 0000-0002-8267-7554
Website: bartoszjanbednarczyk.github.io
Email: bartosz.bednarczyk@cs.uni.wroc.pl

Institute of Computer Science, University of Wrocław
Fryderyka Joliot-Curie 15, 50-383 Wrocław, Poland
Computational Logic Group, ICCL@TU Dresden,
Nöthnitzer Str. 46, 01187 Dresden, Germany

Education

~04.2024	**PhD in Computer Science**, Technische Universität Dresden, Germany. Thesis: *Database-Inspired Reasoning Problems in Description Logics With Path Expressions* Supervisors: Sebastian Rudolph (TU Dresden) and Emanuel Kieroński (University of Wrocław) Reviewers: Sebastian Rudolph (TU Dresden) and Magdalena Ortiz (TU Wien)
01.10.2018	**M1 Master Parisien de Recherche en Informatique**, École Normale Supérieure Paris-Saclay, France Thesis: *Assertion Languages with Modalities and Separating Connectives* Supervisor: Stéphane Demri (LMF, CNRS & ENS Paris-Saclay) Grade: Magna cum laude
15.02.2017	**BSc in Computer Science**, University of Wrocław, Poland Thesis: *Satisfiability of the Two-Variable Fragment of FO with Counting Quantifiers over Finite Trees* Supervisor: Witold Charatonik (University of Wrocław)

Positions

04.2019–Now	**Research Associate**, Technische Universität Dresden, Germany

Participation in Research Grants

04.'19–09.'23	**Research Associate**: ERC Consolidator Grant DeciGUT (PI: Sebastian Rudolph) *Hosting institution*: TU Dresden, Germany
10.'18–09.'22	**Principal Investigator**: Polish Min. of Science and H. Education "Diamond Grant" DI2017006447. *Hosting institution*: University of Wrocław, Poland Realised *with distinction*.
03.'17–06.'18	**Student Assistant**: Polish National Science Centre Grant 2016/21/B/ST6/01444 (PI: E. Kieroński) *Hosting institution*: University of Wrocław, Poland

Longer Research Stays

2021 (2mth)	Research visit (Topic: Model Theory of Ordered Logics) *Hosted by*: Tampere University (Antti Kuusisto)
2018 (3mth)	Research visits (Topic: Query Entailment in Description Logics) *Hosted by*: TU Dresden (Sebastian Rudolph)
2018 (3mth)	Research Internship (Topic: Algebraic Characterisations of Tree Languages) *Hosted by*: University of Oxford (James Worrell & Michaël Cadilhac)
2017 (3mth)	Research Internship (Topic: Temporal Logics and Weighted Automata) *Hosted by*: IST Austria (Krishnendu Chatterjee)

Teaching

`'18-...` Logic in Computer Science @ University of Wrocław (TA)

`'21-...` Computer Science Teacher @ XIV Highschool of Wrocław

`'19-'20` Research Seminar in Logic and Databases (TA) @ University of Wrocław

`'19-'22` Finite and Algorithmic Model Theory (Lecturer + TA)
@ University of Wrocław '19 '22, @ TU Dresden '21 '22.

`'19-'29` Databases @ University of Wrocław (TA)

Awards

2023	Best student paper at JELIA 2023
2021	Award for Outstanding Young Scientists Give by the Polish Ministry of Science and Higher Education (194 040 PLN)
2021	Best student paper at JELIA 2021
2019	Hugo Steinhaus Scholarship for Mathematical Sciences Award for outstanding Phd students from Wrocław (18.000 PLN)
2018	Diamond Grant by the Polish Ministry of Science and Higher Education Prestigious funding for own four-year research project

Professional service

2024	Reviewer: PODS 2024 PC: AAAI 2024
2023	Reviewer: EUMAS 2023 PC: AAAI 2023, KR 2023, JELIA 2023, IJCAI 2023, DL 2023, DPFO Workshop 2023, TIME 2023
2022	Reviewer: CSL 2022, LMCS, IPL, JAIR, ToCL PC: IJCAI 2022, KR 2022, DL 2022
2021	Reviewer: DL 2021, Elsevier Artificial Intelligence, Fundamenta Informaticae Senior PC: IJCAI 2021
2020	Reviewer: KR 2020, CONCUR 2020, DL 2020

Student Supervision

2023	Karol Ochman-Milarski (BSc) Title: Resolution for Forward Guarded Fragment
2023	Julita Osman, Aleksandra Stępniewska, Nikola Wrona (BEng) Title: E-learning platform supporting studying for the Matura exam in Computer Science
2022	Mateusz Urbańczyk (MSc) Title: Categorical semantics for model comparison games for description logics
2022	Johannes Tantow (Großer Beleg) Title: Interpolation for the Two-Variable Guarded Fragment with Counting
2021	Oskar Fiuk (BSc) Title: Presburger Tree Automata With Applications to Logics With Expressive Counting
2021	Sebastian Zięciak (BSc) Title: On Several Equivalent Characterisations of the Variety R
2021	Maja Orłowska and Anna Pacanowska (BSc) Title: Statistical constructions in decidable fragments of First-Order Logic

2021   Martyna Siejba (MSc)
            Title: The complexity of the satisfiability problem for Modal Logics with Data over Heaps

Peer-Reviewed Conference Papers

2023   **Beyond ALCreg: Exploring Non-Regular Extensions of PDL with Description Logics Features**.
        JELIA 2023 **(Best Student Paper Award)**
        Bartosz Bednarczyk

2023   **On the Limits of Decision: the Adjacent Fragment of First-Order Logic**.
        ICALP 2023
        Bartosz Bednarczyk, Daumantas Kojelis, Ian Pratt-Hartmann

2022   **Finite Entailment of Local Queries in the Z Family of Description Logics**.
        AAAI 2022
        Bartosz Bednarczyk, Emanuel Kieroński

2022   **The Price of Selfishness: Conjunctive Query Entailment for ALCSelf Is 2EXPTIME-Hard**.
        AAAI 2022
        Bartosz Bednarczyk, Sebastian Rudolph

2022   **Towards a Model Theory of Ordered Logics: Expressivity and Interpolation**.
        MFCS 2022
        Bartosz Bednarczyk, Reijo Jaakkola

2022   **Presburger Büchi Tree Automata with Applications to Logics with Expressive Counting**.
        WOLLIC 2022
        Bartosz Bednarczyk, Oskar Fiuk

2021   **"Most of" leads to undecidability: Failure of adding frequencies to LTL**.
        FOSSACS 2021
        Bartosz Bednarczyk, Jakub Michaliszyn

2021   **On Classical Decidable Logics Extended with Percentage Quantifiers and Arithmetics**.
        FSTTCS 2021
        Bartosz Bednarczyk, Maja Orlowska, Anna Pacanowska, Tony Tan

2021   **Exploiting Forwardness: Satisfiability and Query-Entailment in Forward Guarded Fragment**.
        JELIA 2021 **(Best Student Paper Award)**
        Bartosz Bednarczyk

2020   **Satisfiability and Query Answering in Description Logics with Global and Local Cardinality Constraints**.
        ECAI 2020
        Franz Baader, Bartosz Bednarczyk, Sebastian Rudolph

2020   **A Framework for Reasoning about Dynamic Axioms in Description Logics**.
        IJCAI 2020
        Bartosz Bednarczyk, Stéphane Demri, Alessio Mansutti

2020   **All-Instances Oblivious Chase Termination is Undecidable for Single-Head Binary TGDs**.
        IJCAI 2020
        Bartosz Bednarczyk, Robert Ferens, Piotr Ostropolski-Nalewaja

2020   **Modal Logics with Composition on Finite Forests: Expressivity and Complexity**.
        LICS 2020
        Bartosz Bednarczyk, Stéphane Demri, Raul Fervari, Alessio Mansutti

2020   **A Note on C2 Interpreted over Finite Data-Words**.
        TIME 2020
        Bartosz Bednarczyk, Piotr Witkowski

2019   **Worst-Case Optimal Querying of Very Expressive Description Logics
        with Path Expressions and Succinct Counting**.
        IJCAI 2019
        Bartosz Bednarczyk, Sebastian Rudolph

2019	**On the Complexity of Graded Modal Logics with Converse**.
	JELIA 2019
	Bartosz Bednarczyk, Emanuel Kieroński, Piotr Witkowski
2019	**Why Propositional Quantification Makes Modal Logics on Trees Robustly Hard?**
	LICS 2019
	Bartosz Bednarczyk, Stéphane Demri
2017	**Extending Two-Variable Logic on Trees**.
	CSL 2017
	Bartosz Bednarczyk, Witold Charatonik, Emanuel Kieroński
2017	**Modulo Counting on Words and Trees**.
	FSTTCS 2017
	Bartosz Bednarczyk, Witold Charatonik

Journal Papers

2023	**On Composing Finite Forests with Modal Logics**.
	ACM Transactions on Computational Logic
	Bartosz Bednarczyk, Stéphane Demri, Raul Fervari, Alessio Mansutti
2022	**Why Does Propositional Quantification Make Modal and Temporal Logics on Trees Robustly Hard?**
	Logical Methods in Computer Science
	Bartosz Bednarczyk, Stéphane Demri
2021	**Completing the Picture: Complexity of Graded Modal Logics with Converse**.
	Theory and Practice of Logic Programming **(invited paper)**
	Bartosz Bednarczyk, Emanuel Kieroński, Piotr Witkowski
2021	**Statistical EL is ExpTime-complete**.
	Information Processing Letters
	Bartosz Bednarczyk
2020	**One-variable logic meets Presburger arithmetic**.
	Theoretical Computer Science
	Bartosz Bednarczyk

Informal Workshop Papers

2022	**Comonadic Semantics for Description Logics Games**
	Description Logics 2022
	Bartosz Bednarczyk, Mateusz Urbanczyk
2021	**The Price of Selfishness: Conjunctive Query Entailment for ALCSelf is 2ExpTime-hard (Extended Abstract)**
	Description Logics 2021
	Bartosz Bednarczyk, Sebastian Rudolph
2021	**Finite-Controllability of Conjunctive Queries in the Z family of Description Logics (Extended Abstract)**
	Description Logics 2021
	Bartosz Bednarczyk, Emanuel Kieroński
2019	**Worst-Case Optimal Querying of Very Expressive Description Logics with Path Expressions and Succinct Counting**
	Description Logics 2019
	Bartosz Bednarczyk, Sebastian Rudolph

2019   **Satisfiability Checking and Conjunctive Query Answering in Description Logics with Global and Local Cardinality Constraint**.
Description Logics 2019
Franz Baader, Bartosz Bednarczyk, Sebastian Rudolph