Robin Kaarsgaard Sales – *Curriculum Vitae*

CONTACT INFORMATION

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Full CV:

EDUCATION

University of Copenhagen, Copenhagen, Denmark

Ph.D., Computer Science, Dec. 2014 – Mar. 2018

- Thesis: *The Logic of Reversible Computing – Theory and Practice*.

M.Sc., Computer Science, Sep. 2012 – Sep. 2014

B.Sc., Computer Science, Aug. 2009 – Jun. 2012

EMPLOYMENT

University of Southern Denmark, Department of Mathematics and Computer Science, Odense, Denmark

Tenure-Track Assistant Professor, Jan. 2023 – present

- Associated with *ACP* and the *Centre for Quantum Mathematics*.

University of Edinburgh, School of Informatics, Edinburgh, United Kingdom

DFF-International Postdoc, Oct. 2020 – Dec. 2022

- Associated with the *Quantum Informatics* group.

University of Copenhagen, Department of Computer Science, Copenhagen, Denmark

Postdoctoral associate, Jan. 2018 – Sep. 2020

Ph.D. fellow, Dec. 2014 – Dec. 2017

RESEARCH INTERESTS

- *Quantum computing*: Categorical quantum theory, quantum programming languages, reasoning and optimisation, reversible foundations.
- *Program semantics*: Semantics of classical and quantum programming languages, especially computational effects, iteration, and inversion.

FUNDING

- EPSRC Standard Research Grant ref. EP/X025551/1, *Rubber DUQ: Flexible Dynamic Universal Quantum programming*, Co-Investigator, Jan. 2024–Dec. 2026, GBP 1.037.881 (∼ DKK 9.265.000).
- DFF-International Postdoctoral Grant no. 0131-00025B, *Landauer Meets von Neumann: Reversibility in Categorical Quantum Semantics*, Principal Investigator, Oct. 2020 – Dec. 2022, DKK 1.727.711.

HONOURS

Teacher of the Year at the Department of Computer Science, University of Copenhagen, 2019.

INTERNATIONAL RELATIONS

- Local organiser, 17th Conference on Reversible Computation.
- Visiting researcher, Laboratory for Foundations of Computer Science at the University of Edinburgh, Jan. 2019.
- Visiting researcher, Nijmegen Quantum Logic Group at Radboud University, Mar. 2016 – Jun. 2016.

- Member of the COST Action IC-1405: *Reversible Computation - Extending Horizons of Computing* Working Group 1 on *Foundations*, 2017 – 2019.
- Seminar participant, NII Shonan Meeting 102: Reverse Execution in Testing.

Teaching

I am set to teach

- Spring 2026: *Quantum Algorithms*
- Autumn 2025: *Quantum Computing Platforms*
- Spring 2025: *Quantum Computing*

I have previously taught

- Autumn 2024: *Functional Programming*
- Spring 2024: *Object Oriented Programming*
- Autumn 2023: *Quantum Computing*
- Spring 2023: *Object Oriented Programming*
- Spring 2022: *Categories and Quantum Informatics* (at University of Edinburgh)
- Autumn 2020: *Grundlæggende datalogi* (at University of Copenhagen)
- Autumn 2019: *Logic in Computer Science* (at University of Copenhagen)
- Spring 2019: *Softwareudvikling* (at University of Copenhagen)
- Spring 2019: *Programming Language Design* (at University of Copenhagen)
- Autumn 2018: *Logic in Computer Science: Models and Proofs for Systems* (at University of Copenhagen)
- Autumn 2018: *Logic in Computer Science: Models and Proofs for Systems* (at University of Copenhagen)
- Autumn 2017: *Logic in Computer Science: Models and Proofs for Systems* (at University of Copenhagen)
- Autumn 2016: *Logic in Computer Science: Models and Proofs for Systems* (at University of Copenhagen)
- Autumn 2015: *Logic in Computer Science: Models and Proofs for Systems* (at University of Copenhagen)
- Spring 2015: *Topics in Programming Languages* (at University of Copenhagen)

Supervision

I am currently supervising:

- Paul Schwartz (Msc, University of Southern Denmark, 2024–)
- Simon Bang (MSc, University of Southern Denmark, 2024–)
- Joachim Tilsted Kristensen (PhD, University of Oslo, 2022–; external co-supervisor)
- Malin Altenmüller (postdoc, University of Edinburgh, 2024–; external co-supervisor)
- Wang Fang (postdoc, University of Edinburgh, 2024–; external co-supervisor)
- Louis Lemonnier (postdoc, University of Edinburgh, 2024–; external co-supervisor)

I have previously supervised:

- Frederik List (BSc, University of Southern Denmark, 2024)
- Christian Nesting (BSc, University of Southern Denmark, 2023)
- Paul Schwartz (BSc, University of Southern Denmark, 2023)
- Simon Bang (BSc, University of Southern Denmark, 2023)
- Marcus Brun Pedersen (BSc, University of Southern Denmark, 2023)
- Rohan Nittur (MInf, University of Edinburgh, 2022)
- Wei Zhen Peong (MInf, University of Edinburgh, 2022)
- Mingrui Zou (MInf, University of Edinburgh, 2022)
- Joachim Tilsted Kristensen (PhD, University of Oslo, 2022–; external co-supervisor)
- Victor Antonio López Martínez (MSc, University of Copenhagen, 2022; external co-supervisor)
- Mikkel Kragh Mathiesen (PhD, University of Copenhagen, 2018–2023; external co-supervisor 2021–2023)
- Jeppe Werner Laursen (MSc, University of Copenhagen, 2021; external cosupervisor)
- Marco Aslak Persson (BSc, University of Copenhagen, 2019)
- Trine Dag Randløv (BSc, University of Copenhagen, 2019)
- Alexander Meinhardt Scheurer (BSc, University of Copenhagen, 2019)
- Jonathan Wraa-Hansen (BSc, University of Copenhagen, 2019)
- Petur Andrias Højgaard Jacobsen (MSc, University of Copenhagen, 2018)
- Xiaomo Yao (MSc, University of Copenhagen, 2018)
- Anders Frederik Jørgensen (BSc, University of Copenhagen, 2018)
- Lars-Bo Vadgaard Nielsen (BSc, University of Copenhagen, 2018)

Invited talks

- *15th International Conference on Reversible Computation*. Giessen, Germany, 2023.
- *29th Nordic Congress of Mathematicians: Special Session on progress and challenges of quantum computing in its NISQ era*. Aalborg, Denmark, 2023.
- *Cambridge Quantum Seminar*, Quantinuum, Cambridge, UK, 2022.

Program Commitees

- Quantum Physics and Logic (QPL 2025)
- Applied Category Theory (ACT 2025, ACT 2022)
- Principles of Programming Languages Student Research Competition (POPL 2025 SRC)
- Reversible Computation (RC 2024, RC 2025 (co-chair))
- Mathematically Structured Functional Programming (MSFP 2024)
- Quantum Search and Information Retrieval (QUASAR '24)

- Programming Languages for Quantum Computing (PLanQC 2024)
- Symposium on Compositional Structures (SYCO 10 (chair))
- Implementation and Application of Functional Languages (IFL 2022, IFL 2023)
- Reversibility in Programming, Languages, and Automata (RPLA 2019).

External reviews

- International Conference on Quantum Physics and Logic (QPL 2021)
- Symposium on Principles of Programming Languages (POPL '21)
- International Conference on Applied Category Theory (ACT 2021)
- International Conference on Functional Programming (ICFP '20)
- International Conference on Foundations of Software Science and Computation Structures (FoSSaCS 2019),
- International Symposium on Functional and Logic Programming (FLOPS 2018),
- International Conference on Generative Programming: Concepts & Experiences (GPCE 2018),
- International Symposium on Logic-based Program Synthesis and Transformation (LOPSTR 2016),
- Conference on Reversible Computation (RC 2015, RC 2016, RC 2017, RC 2018, RC 2019).
- *Quantum*,
- *Journal of Logical and Algebraic Methods in Programming*,
- *Science of Computer Programming*.

Periods of leave

- *Parental leave*, Oct. 15, 2019 – Jan. 15, 2020.
- *Parental leave*, May 25, 2021 – Aug. 25, 2021.