

Mathias Ruggaard Pedersen

Curriculum vitae

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Personal information

Name Mathias Ruggaard Pedersen
Date of birth 17th September 1989
Nationality Danish
Gender Male

Work experience

2019–present **Postdoc**, *Reykjavik university*.

Education

2015–2018 **PhD in Computer Science**, *Aalborg University*.

Thesis title: Behavioural Preorders on Stochastic Systems - Logical, Topological, and Computational Aspects

Research topics: Model checking and formal verification, modal logics, probabilistic and stochastic systems, behavioural distances

2013–2015 **Master of Science (MSc) in Computer Science and Mathematics**, *Aalborg University, 12*.

Topics covered: Formal verification, parallel systems, software engineering, computability and complexity, machine intelligence, databases, statistical modelling, computer algebra

2010–2013 **Bachelor of Science (BSc) in Computer Science and Mathematics**, *Aalborg University, 12*.

Topics covered: Constructive mathematics, object-oriented software development, implementation of programming languages, algorithms and data structures, real and complex analysis, abstract algebra, basic topics in computer science and mathematics

2005-2008 **Aalborg Technical College**.

Doctoral courses

Dec 2017 **Logics for computation**, *Aalborg, Denmark*.

Held by Radu Mardare

Apr-Jun 2017 **Study group on probabilistic programming**, *Aalborg, Denmark*.

Led by Manfred Jaeger

May 2017 **Linear and integer linear programming**, *Aalborg, Denmark*.

Held by K. Subramani

- Dec 2016 **Bayesian statistics, simulation and software**, *Aalborg, Denmark*.
Held by Jesper Møller and Søren Højsgaard
- Apr 2016 **Management of research and development**, *Aalborg, Denmark*.
Held by Frank Gertsen and Ulla Sparre
- Apr 2016 **Midlands graduate school in the foundations of computing science**,
Birmingham, UK.
- Feb-May 2016 **Writing and reviewing scientific papers**, *Aalborg, Denmark*.
Held by Jan Dimon Bendtsen
- Dec 2015 **Mathematical and logical foundations of computer science**, *Aalborg, Denmark*.
Held by Radu Mardare
- Oct 2015 **Study group on metric behavioural semantics for Markov processes**,
Aalborg, Denmark.
Led by Radu Mardare
- Aug 2015 **Linear programming**, *Aalborg, Denmark*.
Held by K. Subramani

Journal publications

- [1] Mikkel Hansen, Kim Guldstrand Larsen, Radu Mardare, and **Mathias Ruggaard Pedersen**, *Reasoning About Bounds in Weighted Transition Systems*, in Logical Methods in Computer Science (LMCS), volume 14, number 4, 2018. doi: 10.23638/LMCS-14(4:19)2018.

Peer reviewed publications

- [2] **Mathias Ruggaard Pedersen**, Giorgio Bacci, Kim Guldstrand Larsen, and Radu Mardare, *A Hemimetric Extension of Simulation for Semi-Markov Decision Processes*, in A. McIver and A. Horvath editors, Proceedings of the 15th International Conference on Quantitative Evaluation of Systems (QEST) 2018. Lecture Notes in Computer Science, Volume 11024, pp. 339–355, 2018. doi: 10.1007/978-3-319-99154-2_21.
- [3] **Mathias Ruggaard Pedersen**, Nathanaël Fijalkow, Giorgio Bacci, Kim Guldstrand Larsen, and Radu Mardare, *Timed Comparisons of Semi-Markov Processes*, in S. T. Klein, C. Martín-Vide, and D. Shapira editors, Proceedings of the 12th International Conference on Language and Automata Theory and Applications (LATA) 2018. Lecture Notes in Computer Science, Volume 10792, pp. 271–283, 2018. doi: 10.1007/978-3-319-77313-1_21.
- [4] Mikkel Hansen, Kim Guldstrand Larsen, Radu Mardare, **Mathias Ruggaard Pedersen**, Bingtian Xue, *A Complete Approximation Theory for Weighted Transition Systems*, in M. Fränzle, D. Kapur, and N. Zhan editors, Proceedings of the 2nd International Symposium on Dependable Software Engineering: Theories, Tools, and Applications (SETTA) 2016. Lecture Notes in Computer Science, Volume 9984, pp. 213–228, 2016. doi: 10.1007/978-3-319-47677-3_14.

Informal publications

- [5] **Mathias Ruggaard Pedersen**, Nathanaël Fijalkow, Giorgio Bacci, Kim Guldstrand Larsen, and Radu Mardare, *Comparing the speed of probabilistic processes*, extended abstract and poster at PPS 2018: Probabilistic Programming Languages, Semantics, and Systems.

Teaching experience

- Spring 2019 **Syntax and semantics**, Aalborg University.
Teaching assistant
- Spring 2019 **DAT4/SW4**, *Design, Definition, and Implementation of Programming Languages*, Aalborg University.
Project supervisor – 2 groups
- Spring 2019 **DAT2/SW2**, *Programming and Problem Solving*, Aalborg University.
Project supervisor – 4 groups
- Fall 2018 **DAT1/SW1**, *From Existing Software to Models*, Aalborg University.
Project supervisor – 3 groups
- Spring 2017 **Syntax and semantics**, Aalborg University.
Teaching assistant
- Spring 2017 **SW6**, *Bachelor Project (Development of Complex Software Systems)*, Aalborg University.
Project supervisor – 3 groups
- Fall 2016 **DAT1/SW1**, *From Existing Software to Models*, Aalborg University.
Project supervisor – 4 groups
- Spring 2016 **DAT4**, *Design, Definition, and Implementation of Programming Languages*, Aalborg University.
Project supervisor – 2 groups
- Fall 2015 **DAT1/SW1**, *From Existing Software to Models*, Aalborg University.
Project supervisor – 1 group
- Spring 2015 **Discrete mathematics**, Aalborg University.
Teaching assistant
- Spring 2014 **Discrete mathematics**, Aalborg University.
Teaching assistant

Attended conferences and workshops

- Apr 2019 **16th Workshop on Quantitative Aspects of Programming Languages and Systems (QAPL 2019)**, *speaker*, Prague, Czech Republic. Co-located with FoSSaCS and TACAS as part of ETAPS.
- Sep 2018 **15th International Conference on Quantitative Evaluation of Systems (QEST 2018)**, *speaker*, Beijing, China. Co-located with CONCUR, FORMATS, SETTA, and EXPRESS/SOS as part of CONFESTA.
- April 2018 **12th International Conference on Language and Automata Theory and Applications (LATA 2018)**, *speaker*, Bar-Ilan near Tel Aviv, Israel.

- Sep 2017 **5th QuantLA workshop**, *speaker*, Altenberg, Germany.
- August 2017 **42nd International Symposium on Mathematical Foundations of Computer Science (MFCS 2017)**, *attendee*, Aalborg, Denmark. Co-located with KiMfest and DHS.
- April 2016 **Weighted Automata: Theory and Applications (WATA 2016)**, *attendee*, Aalborg, Denmark.
- Dec 2015 **IDEA4CPS workshop project meeting**, *speaker*, Beijing, China.

PhD Thesis

- Title Behavioural Preorders on Stochastic Systems - Logical, Topological, and Computational Aspects
- Supervisors Radu Mardare and Kim Guldstrand Larsen
- Institution Department of Computer Science, Aalborg University
- Assessment Lisbeth Fajstrup, Ana Sokolova, and Marco Carbone committee

Languages

- Danish Native language
- English Fluent
- German Basic