GERCO VAN HEERDT

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Citizenship: Dutch (pre-settled UK)
Languages: Dutch (fluent), English (fluent), German (mediocre), French (terrible)
Year of birth: 1993

Education

SEP 2020 SEP 2016	PhD in Computer Science University College London Thesis: *CALF: Categorical Automata Learning Framework* Supervisor: Alexandra Silva Second supervisors: Jurriaan Rot and Matteo Sammartino Assessors: Bartek Klin and Nikos Tzevelekos
AUG 2016 SEP 2014	MSc in Computer Science Radboud University Nijmegen Grade: 7.9/10 Track: Mathematical Foundations of Computer Science Thesis: *An Abstract Automata Learning Framework* (graded 9/10) Supervisor: Frits Vaandrager Second supervisors: Joshua Moerman and Alexandra Silva Assessor: Bart Jacobs
AUG 2014 SEP 2011	BSc in Computer Science Radboud University Nijmegen Grade: 7.7/10, *bene meritum* Minor in Artificial Intelligence Thesis: *Efficient Inference of Mealy Machines* (graded 10/10) Supervisor/assessor: Alexandra Silva Second assessor: Frits Vaandrager

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Employment

Present Jun 2022	Research Engineer at Droit Financial Technologies
May 2022 Mar 2020	Research Fellow at University College London
Dec 2019 Sep 2019	Teaching assistant at University College London Ran Python clinics for the course *Design and Professional Skills 1.*
Dec 2018 Oct 2018	Teaching assistant at University College London Ran Python clinics for the course *Design and Professional Skills 1.*
Mar 2018 Jan 2018	Teaching assistant at University College London Helped teach Java exercise classes for the course *Introduction to Programming.*
Jan 2015 Sep 2014	Student assistant at Radboud University Nijmegen Taught exercise classes and provided solutions for the course *Algorithms and Data Structures.*

Publications

[1] Gerco van Heerdt, Tobias Kappé, Jurriaan Rot, and Alexandra Silva. Learning pomset automata. In *FoSSaCS*, LNCS. Springer, 2021. doi: 10.1007/978-3-030-71995-1_26.

[2] Gerco van Heerdt, Matteo Sammartino, and Alexandra Silva. Learning automata with side-effects. In *CMCS*, LNCS. Springer, 2020. doi: 10.1007/978-3-030-57201-3_5.

[3] Gerco van Heerdt, Clemens Kupke, Jurriaan Rot, and Alexandra Silva. Learning weighted automata over principal ideal domains. In *FoSSaCS*, LNCS. Springer, 2020. doi: 10.1007/978-3-030-45231-5_31.

[4] Gerco van Heerdt, Joshua Moerman, Matteo Sammartino, and Alexandra Silva. A (co)algebraic theory of succinct automata. *JLAMP*, 2019. doi: 10.1016/j.jlamp.2019.02.008.

[5] Gerco van Heerdt, Tobias Kappé, Jurriaan Rot, Matteo Sammartino, and Alexandra Silva. Tree automata as algebras: Minimisation and determinisation. In *CALCO*, LIPIcs. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2019. doi: 10.4230/LIPIcs.CALCO.2019.6.

[6] Gerco van Heerdt, Bart Jacobs, Tobias Kappé, and Alexandra Silva. Learning to coordinate. In *It's All About Coordination - Essays to Celebrate the Lifelong Scientific Achievements of Farhad Arbab*, LNCS. Springer, 2018. doi: 10.1007/978-3-319-90089-6_10.

[7] Gerco van Heerdt, Justin Hsu, Joël Ouaknine, and Alexandra Silva. Convex language semantics for nondeterministic probabilistic automata. In *ICTAC*, LNCS. Springer, 2018. doi: 10.1007/978-3-030-02508-3_25.

[8] Gerco van Heerdt, Matteo Sammartino, and Alexandra Silva. CALF: categorical automata learning framework. In *CSL*, LIPIcs. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2017. doi: 10.4230/LIPIcs.CSL.2017.29.

Programming projects

- A chat client for the game Warsow that uses ncurses to allow users to join and chat in several game servers at once. It also provides a plugin system with several core plugins including automatic recording of all players at the same time to collect race record demos. This is a major project of which I am the sole author. *C*, https://github.com/hettoo/chatsow.

- Several contributions to Warsow/Qfusion, including major changes to the race gametype (*Angelscript*, https://github.com/hettoo/wsw-race/tree/racemod) and bug fixes as well as new features for the actual game that have been merged into the official code base (*C*, https://github.com/Qfusion/qfusion/commits?author=hettoo).

- An implementation of a class of automata learning algorithms parametric in a monad. *Haskell*, http://www.calf-project.org/files/LStarT_hs.tar.gz.

- A scraper for a betting odds comparison website to find and help exploit arbitrage opportunities. *Python*, https://github.com/hettoo/arbitrage.

Talks

MAR 2021	Learning Pomset Automata. *FoSSaCS.*
MAR 2021	Learning Weighted Automata over Principal Ideal Domains. *FoSSaCS.*
APR 2020	Learning Weighted Automata over Principal Ideal Domains. *Software science seminar, Radboud University.*
JAN 2020	Learning Weighted Automata over Principal Ideal Domains. *Learning and Verification day, LaBRI.*
SEP 2019	Learning Weighted Automata. *UCL PPLV Galway Trip.*
JUN 2019	Tree Automata as Algebras: Minimisation and Determinisation. *CALCO.*
JAN 2019	Automata Learning. *Talk for a group of students.*
OCT 2018	Convex Language Semantics for Nondeterministic Probabilistic Automata. *ICTAC.*
SEP 2017	Learning Automata with Side-Effects. *YR-CONCUR.*
AUG 2017	CALF: Categorical Automata Learning Framework. *CSL.*
MAY 2017	CALF: Categorical Automata Learning Framework. *UCL PPLV seminar.*

Other research activities

MAR 2021	Chaired a conference session. *FoSSaCS.*
AUG 2019	Attended SPLV: The Scottish Programming Languages and Verification Summer School. *Strathclyde University, Glasgow.*
MAR 2019	Attended Bellairs workshop on Learning and Verification. *Bellairs Research Institute, Barbados.*
JUL 2018	Attended FoPSS: School on Foundations of Programming and Software systems. Logic and Learning. *St Anne's College, Oxford.*
DEC 2017	Attended Winter School in Computer Science and Engineering on Formal Verification. *Israel Institute for Advanced Studies, Jerusalem.*
MAY/JUN 2017	Attended FoPSS: School on Foundations of Programming and Software systems. Probabilistic programming. *Braga.*

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