

Sean Watters

Curriculum Vitae

University of Strathclyde
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Education

- 2021–Date **PhD Computer and Information Sciences**, *University of Strathclyde*.
Supported by EPSRC Mathematical Sciences DTP grant.
Supervisors: Dr. Clemens Kupke & Dr. Fredrik Nordvall Forsberg.
- 2018–2021 **BSc Computer Science**, *University of Strathclyde*.
Graduated with First Class Honours.
Passed Year 3 with Distinction and received the Dean's Certificate.
Passed Year 2 with Distinction and received the Dean's Certificate.
Entered Year 2 directly after transferring from Mechanical Engineering.
- 2016–2018 **Certificate of Higher Education in Mechanical Engineering with Merit**,
University of Strathclyde.
- 2010–2016 **Holy Cross High School**.
ABB at Advanced Higher, AAAAAA at Higher.

BSc Project

- Title Model checking performance of the modal μ -calculus
- Supervisor Dr. Clemens Kupke
- Abstract The modal μ -calculus is an important logic in the field of model checking. One model-checking procedure for the μ -calculus is to construct a parity game from a model-formula pair. Identifying which player has a winning strategy is equivalent to deciding whether or not the formula holds in the model. However, there are several different methods to construct such a game, based on different syntactic operations on formulae. The aim of my project was to investigate the effects of these constructions on the size and complexity of the produced games (and hence, on the time required to solve them). Using random samplings of formulae, I found an average difference on the order of 30%, compared to the theoretical worst-case exponential blowup.

Teaching

- 2023 **Tutor**, *CS103 Machines, Languages & Computation*, University of Strathclyde.
- 2022 **Lab Demonstrator**, *CS209 User & Data Modelling*, University of Strathclyde.
- 2022-2023 **Tutor**, *CS260 Functional Thinking*, University of Strathclyde.
- 2021-2022 **Lab Demonstrator**, *CS410 Advanced Functional Programming*, University of Strathclyde.
- 2021-2022 **Tutor**, *CS106 Computer Systems and Organization*, University of Strathclyde.

Speaking

- 27-01-23 **MSP101**, *University of Strathclyde*, Sorted Lists and Free Idempotent Commutative Monoids (over strict total orders).
- 10-11-21 **MSP101**, *University of Strathclyde*, A Tour of Temporal Logic. [[Slides here](#)].

References

Dr. Clemens Kupke

Institution University of Strathclyde

Title Senior Lecturer

Dr. Fredrik Nordvall Forsberg

Institution University of Strathclyde

Title Chancellor's Fellow, Lecturer