

Yannick Forster

CV

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* 13.06.1993

Education

- since 10/2016 **Saarland University Programming Systems Lab**, *PhD Student under the supervision of Prof. Dr. Gert Smolka.*
- since 03/2015 **Saarbrücken Graduate School of Computer Science**, *Member of the Graduate School of Computer Science.*
- 2015–2016 **University of Cambridge, Robinson College**, *M.Phil. Advanced Computer Science, with distinction.*
Focus on Category Theory and (Denotational) Semantics of Programming Languages. Master's thesis: "On the expressiveness of effect handlers and monadic reflection", Supervisors: Ohad Kammar and Marcelo Fiore
- 2012–2015 **Saarland University**, *B.Sc. Computer Science, Saarbrücken, Grade 1.2.*
Minor in Mathematics. Focus on Logic, Theorem Proving, Verification and Programming Language Semantics. Bachelor's thesis: "A Formal and Constructive Theory of Computation", Supervisor: Gert Smolka
- 2012 **Gymnasium Birkenfeld**, *Abitur, Grade 1.2.*

Publications

Conferences

- 2019 Yannick Forster, Steven Schäfer, Simon Spies, Kathrin Stark. "Call-By-Push-Value in Coq: Operational, Equational and Denotational Theory". *Proceedings of the 9th ACM SIGPLAN International Conference on Certified Programs and Proofs, CPP 2019, 2019.*
- 2019 Yannick Forster, Dominik Kirst, Gert Smolka. "On Synthetic Undecidability in Coq, with an Application to the Entscheidungsproblem". *Proceedings of the 9th ACM SIGPLAN International Conference on Certified Programs and Proofs, CPP 2019, 2019.*
- 2019 Yannick Forster and Dominique Larchey-Wendling. "Certified Undecidability of Intuitionistic Linear Logic via Binary Stack Machines and Minsky Machines". *Proceedings of the 9th ACM SIGPLAN International Conference on Certified Programs and Proofs, CPP 2019, 2019.*
- 2018 Fabian Kunze, Gert Smolka, Yannick Forster. "Formal Small-step Verification of a Call-by-value Lambda Calculus Machine". *Asian Symposium on Programming Languages and Systems, APLAS 2018. Springer, Cham, 2018.*
- 2018 Yannick Forster, Edith Heiter, Gert Smolka. "Verification of PCP-Related Computational Reductions in Coq". *International Conference on Interactive Theorem Proving, ITP 2018. Springer, Cham, 2018.*
- 2017 Yannick Forster, Ohad Kammar, Sam Lindley, Matija Pretnar. "On the expressive power of user-defined effects: Effect handlers, monadic reflection, delimited control." *Proceedings of the ACM on Programming Languages 1. ICFP 2017: 13.*
- 2017 Yannick Forster and Gert Smolka. "Weak Call-by-Value Lambda Calculus as a Model of Computation in Coq". *International Conference on Interactive Theorem Proving, ITP 2017. Springer, Cham, 2017.*

Journals

- 2018 Yannick Forster and Gert Smolka. "Call-by-Value Lambda Calculus as a Model of Computation in Coq". *Journal of Automated Reasoning*, 2018.

Workshops

- 2018 Yannick Forster and Dominique Larchey-Wendling. "Towards a library of formalised undecidable problems in Coq: The undecidability of intuitionistic linear logic". *Syntax and Semantics of Low-Level Languages workshop*, LOLA 2018.
- 2017 Yannick Forster, Fabian Kunze, Marc Roth. "The strong invariance thesis for a lambda-calculus". *Syntax and Semantics of Low-Level Languages workshop*, LOLA 2017.
- 2016 Yannick Forster and Fabian Kunze. "Verified Extraction from Coq to a Lambda-Calculus". *Coq Workshop 2016*.

Teaching

At Saarland University

- Winter 2018 **Programming 1**, *TA*, Programming Systems Lab.
- Summer 2018 **Advanced Coq Programming**, *Organiser and Lecturer*, Programming Systems Lab.
- Winter 2017 **Category Theory Seminar**, *Adviser*, Programming Systems Lab.
- Summer 2017 **Mathematics Preparatory Course for Computer Scientists**, *Organiser*, Computer Science department.
- Summer 2017 **Didactic Seminar for Student TAs in Programming 1**, *Organiser*, Reactive Systems Group.
- Summer 2017 **Category Theory Seminar**, *Adviser*, Programming Systems Lab.
- Summer 2017 **Introduction to Computational Logic**, *TA*, Programming Systems Lab.
- Summer 2016 **Mathematics Preparatory Course for Computer Scientists**, *Organiser, Lecturer and Coach*, Computer Science department.
- Winter 2016 **Seminar Functional Programming**, *Adviser*, Programming Systems Lab.
- Summer 2015 **Mathematics Preparatory Course for Computer Scientists**, *Part of the organisation team*, Computer Science department.
- Winter 2014 **Didactic Seminar for Re-exam Student TAs in Programming 1**, *Organiser*, Reactive Systems Group.
- Winter 2014 **Programming 1**, *Supervision Student TA*, Reactive Systems Group.
Didactic and organisational support for the other TAs
- Summer 2014 **Introduction to Computational Logic**, *Student TA*, Programming Systems Lab.
- Winter 2013 **Programming 1**, *Student TA*, Dependable Systems and Software Group.
- Summer 2013 **Mathematics Preparatory Course for Computer Scientists**, *Student TA*, Computer Science department.

Other

- 2017 **Preparatory Course in Mathematics for pupils**, *abiturma / ZEIT Schülercampus*.
Taught two one-week courses for students in preparation of their Abitur

Supervised Students

Saarland University

- 2018 Dominik Wehr, Bachelor's thesis (ongoing). "Completeness of first-order logic in Coq", co-advised with Dominik Kirst
- 2018 Simon Spies, Bachelor's thesis (ongoing). "Undecidability of Higher-Order Unification in Coq"
- 2017 Maximilian Wuttke, Bachelor's thesis. "Verified Programming of Turing Machines in Coq"
- 2017 Edith Heiter, Bachelor's thesis. "Undecidability of the Post Correspondence Problem in Coq", co-supervised with Gert Smolka

Scholarships, Awards and Honors

- 2017 **BeStE Preis**, *Saarland University*.
Price for student initiatives and extraordinary commitment, awarded by the presidential board of the university
- 2015–2016 **Kurt Hahn Trust**, *University of Cambridge*.
Scholarship for graduate students of German nationality at the University of Cambridge
- 2015–2016 **German Academic Exchange Service**, (*Deutscher Akademischer Auslandsdienst, DAAD*).
Scholarship for graduate students pursuing a degree abroad
- 2013–2016 **German National Academic Foundation**, (*Studienstiftung des deutschen Volkes*).
Financial and academic scholarship, awarded to less than 0.5% of students in Germany
- 2015 **FdSI Bachelor Award**, *Saarland University*.
awarded to the best Bachelor graduates in CS
- 2013–2015 **Member of the Bachelor's Honors Program**, *Saarland University*.
special support program for talented and ambitious Bachelor students in CS
- 2012 **Award for outstanding extracurricular commitment in school**.
awarded by the Minister of Education, Rhineland-Palatinate

Languages

German	Native	<i>Written and spoken</i>
English	Fluent	<i>Written and spoken</i>
Spanish	Beginner	<i>Spoken</i>

Interests

- Theatre Theatre group Gymnasium Birkenfeld (2008–2013), ThUniS theatre group (since 2016)
- Football SV Heimbach and Robinson College Football Club (2015–2016)
- Rowing Robinson College Boat Club (2015–2016), Undine Rowing Club Saarbrücken (since 2016)