Floris van Doorn

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Positions

2018-	Postdoctoral Associate, Mathematics Department, University of Pittsburgh. Supervisor: Thomas Hales. Formal Abstracts project.
2013-2018	Ph.D. in Pure and Applied Logic, Carnegie Mellon University. Thesis: On the Formalization of Higher Inductive Types and Synthetic Homotopy Theory. Advisor: Jeremy Avigad.
2011-2013	M.Sc. (cum laude), Mathematical Sciences, Utrecht University. Thesis: Explicit convertibility proofs in Pure Type Systems. Advisor: Freek Wiedijk.
2008-2011	B.Sc. (cum laude), Mathematics, Utrecht University.
2008-2011	B.Sc. (cum laude), Physics and Astronomy, Utrecht University.

Publications

2018 "Higher Groups in Homotopy Type Theory, with Ulrik Buchholtz (first author) and Egbert Rijke. *Logic in Computer Science* (LICS).

2017 "Homotopy Type Theory in Lean," with Jakob von Raumer and Ulrik Buchholtz. *8th International Conference on Interactive Theorem Proving* (ITP).

2016 "Constructing the Propositional Truncation using Non-recursive HITs." *The 5th ACM SIGPLAN Conference on Certified Programs and Proofs* (CPP).

2015 "The Lean Theorem Prover (system description)," with Leonardo de Moura (first author), Soonho Kong, Jeremy Avigad and Jakob von Raumer. *The 25th jubilee edition of the International Conference on Automated Deduction* (CADE).

2014 "The Structural Theory of Pure Type Systems," with Cody Roux (first author). *LNCS Advanced Research in Computing and Software Science 2014.*

2013 "Explicit convertibility proofs in Pure Type Systems," with Herman Geuvers and Freek Wiedijk. *Proceedings of the Workshop on Logical Frameworks and Meta-languages: Theory and Practice (LFMTP), 25-36, 2103.*

Selected Talks

2018 "Spectral Sequences in Homotopy Type Theory," *Workshop: Types, Homotopy Type theory, and Verification*, Hausdorff Research Institute for Mathematics.

2017 "Formalized Spectral Sequences in Homotopy Type Theory," *Algebra, Combinatorics, and Geometry seminar*, University of Pittsburgh (two talks).

2017 "Homotopy Type Theory in Lean," *Computer-aided mathematical proof*, Cambridge.

2017 "Eilenberg-MacLane spaces in Homotopy Type Theory," *ASL North American annual meeting*, Boise.

2016 "Homotopy Type Theory in Lean," *Univalent Foundations and Proof Assistants, ICMS*.

2016 "Reducing higher inductive types to quotients," *Workshop on Homotopy Type Theory and Univalent Foundations of Mathematics*, Fields Insitute Toronto.

2016 "The Lean Theorem Prover and Homotopy Type Theory," talk together with Jeremy Avigad. *Workshop on Homotopy Type Theory and Univalent Foundations of Mathematics*, Fields Insitute Toronto.

Teaching

2016 TA for Differential and Integral Calculus with Russell C. Walker (CMU).

2015 TA for Logic and Mathematical Inquiry with Jeremy Avigad (CMU).

2015 TA for Game Theory with Adam Bjorndahl (CMU).

2014 TA for Formal Logic with Steve Awodey (CMU).

2012 TA for Discrete Mathematics with Han Hoogeveen (Utrecht).

2011 TA for Foundations of Mathematics with Jaap van Oosten (Utrecht).

Awards

2012 First prize at the International Mathematics Competition for University Students.

2011 Second prize at the International Mathematics Competition for University Students.

2010 Second prize at the International Mathematics Competition for University Students.

2009 KHMW "Jong Talent Aanmoedigingsprijs" (lit. "Young Talent Incentive Price") for mathematics.

2008 Silver medal at the International Mathematical Olympiad.

Unpublished Work

2016 "Logic and Proof," Jeremy Avigad, Robert Y. Lewis, Floris van Doorn. Online textbook for the course Logic and Mathematical Inquiry, `http://avigad.github.io/logic_and_proof/`.

2015 "The Lean Theorem Prover," Floris van Doorn. Blog post, `http://homotopytypetheory.org/2015/12/02/the-proof-assistant-lean/`.

2015 "Constructing the Propositional Truncation using Nonrecursive HITs," Floris van Doorn. Blog post, `http://homotopytypetheory.org/2015/07/28/constructing-the-propositional-truncation-using-nonrecursive-hits/`.

2014 "Propositional Calculus in Coq," Floris van Doorn. `arXiv:1503.08744`.

Service

2017 Reviewed manuscript for the special issue of the Journal of Automated Reasoning, "Milestones in Interactive Theorem Proving".

2017 Reviewed manuscript for the post-proceedings of TYPES 2016.

Extracurricular University Service

2009-2013	Trainer of the Dutch Mathematical Olympiad.
2008-2013	Volunteer for the "Vierkant voor Wiskunde" mathematics summer camps.
2012-2013	Chairman of the Benelux Mathematical Olympiad 2013.
2011-2012	Treasurer of the Dutch University Mathematical Olympiad 2012.
2009-2011	IT committee member for the International Mathematical Olympiad 2011.
2009-2010	Head awards ceremony of the Benelux Mathematical Olympiad 2010.
2008-2009	Secretary of the Benelux Mathematical Olympiad 2009.

Languages

Dutch (native), English (fluent), German (basic), French (basic).
Programming: LaTeX, Lean, Mathematica, Coq.
Some experience in C, Python, Standard ML.