



Evgenii Kotelnikov, Ph.D.

Date of birth: 15 February 1990
Current location: Gothenburg, Sweden
Language proficiency: English (fluent), Russian (native), Swedish (intermediate)

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Main areas of expertise

Software engineering Automated reasoning Functional programming Formal methods Software verification

Education

Doctor of philosophy (Ph.D.) September 2013 to September 2018 📅
[Chalmers University of Technology](#), Department of Computer Science Gothenburg, Sweden 📍

Ph.D. supervisors [Laura Kovács](#) and [Andrei Voronkov](#)

Thesis titled “[Automated Theorem Proving with Extensions of First-Order Logic](#)”

Explored ways to make automated theorem provers for first-order logic more efficient for applications. These applications include automation of proof assistants and static analysis of software and networks.

Automated theorem proving First-order logic Program analysis Vampire

Master of science (M.Sc.) September 2011 to July 2013 📅
[Saint-Petersburg State University](#), Department of Applied Mathematics Saint-Petersburg, Russia 📍

Thesis titled “**Syntactical Extensions of Scala for Effectful Computations**”

Scala Metaprogramming Monads Computational effects

Bachelor of science (B.Sc.) September 2007 to July 2011 📅
[Saint-Petersburg State University](#), Department of Applied Mathematics Saint-Petersburg, Russia 📍

Thesis titled “**Source Code Generation Based on Language Grammar Description**”

Source code generation Context-free grammars Algebraic data types Scheme

Summer & winter schools

[Marktoberdorf Summer School 2016](#): Dependable Software Systems Engineering August 2016 📅

Summer School 2014: Verification Technology, Systems & Applications ([VTSA'2014](#)) October 2014 📅

Advanced Winter School on Reasoning Engines for Rigorous System Engineering ([ReRiSE'14](#)) February 2014 📅

Working experience

🌐 [LinkedIn profile](#)

Ericsson AB August 2019 📅
Software developer Gothenburg, Sweden 📍

Develop new features for the control plane of Ericsson's solution for Evolved Packet Network.

Erlang OTP C Python Bash Kubernetes Docker

Chalmers University of Technology September 2013 to September 2018 📅
Doctoral researcher Gothenburg, Sweden 📍

- Conducted research in the areas of automated theorem proving, formal methods and functional programming.
- Published and presented academic results in peer-reviewed conferences and workshops.
- Actively contributed to [Vampire](#), a state-of-the-art automated theorem prover for first-order logic.
- Reviewed paper submission for [SCSS 2014](#), [FM 2015](#), [LPAR-20](#), [CPP 2016](#), [CICM 2016](#), [FM 2016](#), [PSI-2017](#), [TACAS 2018](#), [FM 2018](#) and [iFM 2018](#).
- Assisted to preparing assignments, conducting consultation sessions and grading exams in the following courses.
 - Databases (2014 📅, 2015 📅, 2016 📅, 2017 📅, 2018 📅)
 - Algorithms and Datastructures (2014 📅)
 - Functional Programming (2014 📅, 2015 📅, 2016 📅, 2017 📅, 2018 📅)
- Developed and maintained a homework submission system in the Computer Science department used annually by approx. 1000 students and 20 faculty members.

Java Haskell Python PostgreSQL Oracle Database

Amazon Web Services March 2017 to June 2017 📅
Applied scientist intern New York, USA 📍

Developed tools for static analysis of AWS virtual private cloud networks at the [Automated Reasoning Group](#). Among these tools are [Zelkova](#) and [Tiros](#).

Scala Python Datalog Vampire Z3

Yandex Inc. March 2011 to August 2013 📅
Software developer Saint-Petersburg, Russia 📍

- Designed and developed the backend for high-load web search services.
- Developed tools for mining semi-structured data on the web.

Java Scala Akka Oracle Database MongoDB Redis

Motorola Solutions Inc. July 2010 to December 2010 📅
Software engineering intern Saint-Petersburg, Russia 📍

Designed a specification language for low-level telecom protocols and implemented a toolchain for it.

Scheme C Python Wireshark

Freelance 2005 to 2010 📅
Web developer Remote 📍

Developed client and server sides of commercial websites.

PHP MySQL HTML CSS JavaScript jQuery

Public software projects

🔗 [GitHub profile](#)

Vampire 2014 to current 📅

An award-winning automated theorem prover for first-order logic.

C++ 175 KLOC

Fire 2014 to 2018 📅

A submission system for homework assignments.

Python Pyramid HTML CoffeeScript LESS Docker 30 KLOC

voogie 2018 📅

A verification conditions generator for the Boogie intermediate verification language.

Haskell 2 KLOC

scala-workflow 2013 📅

An extension to Scala for boilerplate-free syntax for effectful computations.

Scala 1.5 KLOC

tptp 2019 📅

A library for parsing and pretty printing for the TPTP language.

Haskell 1.6 KLOC

List of publications

🔗 [Google Scholar profile](#)

[Reachability Analysis for AWS-based Networks](#) 2019 📅
A. Gacek, J. Backes, B. Cook, N. Rungta, S. Bayless, C. Dodge, C. Varming, A.J. Hu, B. Kocik, [E. Kotelnikov](#), J. Kukovec, S. McLaughlin, J. Reed, J. Sizemore, M. Stalzer, P. Srinivasan, P. Subotic, B. Whaley, Y. Wu and T. Kahsai
Proceedings of the 31st International Conference On Computer Aided Verification

[TFX: The TPTP Extended Typed First-order Form](#) 2018 📅
G. Sutcliffe and E. Kotelnikov
Proceedings of the 6th Workshop on Practical Aspects of Automated Reasoning

[A FOOLish Encoding of the Next State Relations of Imperative Programs](#) 2018 📅
E. Kotelnikov, L. Kovács and A. Voronkov
Proceedings of the 9th International Joint Conference on Automated Reasoning

[A Clausal Normal Form Translation for FOOL](#) 2016 📅
E. Kotelnikov, L. Kovács, M. Suda and A. Voronkov
Proceedings of the 2nd Global Conference on Artificial Intelligence

[The Vampire and the FOOL](#) 2016 📅
E. Kotelnikov, L. Kovács, G. Reger and A. Voronkov
Proceedings of the 5th ACM SIGPLAN Conference on Certified Programs and Proofs

[A First Class Boolean Sort in First-Order Theorem Proving and TPTP](#) 2015 📅
E. Kotelnikov, L. Kovács and A. Voronkov
Conferences on Intelligent Computer Mathematics

[Type-Directed Language Extension for Effectful Computations](#) 2014 📅
E. Kotelnikov
Proceedings of the Fifth Annual Scala Workshop

[Embeddable Framework for Syntax-Safe Source Code Generation](#) 2012 📅
E. Kotelnikov
Proceedings of the 2012 Joint International Conference on Human-Centered Computer Environments