Evgenii Kotelnikov, Ph.D.

Date of birth: 15 February 1990

Current location: Gothenburg, Sweden

Language proficiency: English (fluent), Russian (native), Swedish (intermediate)

evgeny.kotelnikov@gmail.com www.ekotelnikov.com aztek

Main areas of expertise

Software engineering | Formal methods | Automated reasoning | Software verification | Functional programming

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. This work resulted in several academic publications, conference speeches, and active contributions to the Vampire theorem prover.

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

Chalmers University of Technology

September 2013 to September 2018

Teacher assistant — Gothenburg, Sweden

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)

Java | Haskell | PostgreSQL | Oracle Database

Amazon Web Services

March 2017 to June 2017

Software engineering intern — New York, USA

Developed tools for static analysis of AWS virtual private cloud networks. Among these tools are Zelkova and Tiros

Scala | Python | Datalog | Vampire | Z3

Yandex Inc.

March 2012 to August 2013

Software engineer — Saint-Petersburg, Russia

Designed and developed the backend for high-load web search services

Java | Scala | Akka | Oracle Database | MongoDB | Redis

Yandex Inc.

March 2011 to March 2012

Software engineering intern — Saint-Petersburg, Russia

Developed tools for mining semi-structured data on the web

Java | Oracle Database

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

TFX: The TPTP Extended Typed First-order Form

2018

G. Sutcliffe and E. Kotelnikov

In ***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

In ***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

In ***Proceedings of the 2nd Global Conference on Artificial Intelligence***

The Vampire and the FOOL

2016

E. Kotelnikov, L. Kovács, G. Reger and A. Voronkov

In ***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

In ***Conferences on Intelligent Computer Mathematics***

Type-Directed Language Extension for Effectful Computations

2014

E. Kotelnikov

In ***Proceedings of the Fifth Annual Scala Workshop***

Embeddable Framework for Syntax-Safe Source Code Generation

2012

E. Kotelnikov

In ***Proceedings of the 2012 Joint International Conference on Human-Centered Computer Environments***