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 competences

Formal methods | Automated reasoning | Functional programming | Software verification | Databases | Cloud

C | C++ | Java | Scala | Haskell | Python

Work experience

LinkedIn profile

Zenseact AB

February 2021 to now

Software developer — Gothenburg, Sweden

Zenseact develops an autonomous driving platform for Volvo Cars.

- Prototype high integrity software components of self-driving cars in the Ada programming language.
- Formalize and statically verify safety requirements using the SPARK framework.

C++ | Python | Ada | SPARK

Ericsson AB

August 2019 to January 2021

Software developer — Gothenburg, Sweden

- Implemented new features for the control plane of SGSN-MME.
- Developed the telco cloud infrastructure, including storage, networking and logging, for Packet Core Controller.

Linux | Erlang | C | Bash | Python | 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 conferences and workshops (see my Google Scholar profile).
- 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 courses on Functional Programming, Databases, Algorithms and Datastructures.
- 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, Automated Reasoning Group — New York, USA

Implemented an experimental backend for Tiros — a static analyzer of AWS virtual private cloud networks.

Scala | Python | Datalog | Vampire | Z3

Yandex Inc.

March 2011 to August 2013

Software developer — Saint-Petersburg, Russia

- Developed the back end of high-load web search services, including an in-house performant database solution capable of serving up to 400 requests per second.
- Developed information retrieval tools and web crawlers.
- Developed an app recommendation system for Yandex.Store.

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.

Lisp | C | Python | Wireshark

Freelance

2005 to 2010

Web developer — Remote

Developed front end and back end of commercial websites.

PHP | MySQL | HTML | CSS | JavaScript | jQuery

Education

Doctor of philosophy (Ph.D.)

September 2013 to September 2018

Chalmers University of Technology, Department of Computer Science — Gothenburg, Sweden

Thesis titled **"Automated Theorem Proving with Extensions of First-Order Logic"**

Ph.D. supervisors Laura Kovács and Andrei Voronkov

Explored ways to make automated theorem provers more efficient for applications by extending the logic they support.

The 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

Public software projects

GitHub profile

vampire

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

C++

voogie

A verification conditions generator for the Boogie intermediate verification language.

Haskell

scala-workflow

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

Scala

atomizer

A static analysis tool for finding loose atoms in large Erlang code bases.

Erlang

atp

Haskell interface to automated theorem provers.

Haskell

fire

A submission system for homework assignments.

Python | HTML | CoffeeScript | Docker