



Evgenii Kotelnikov, Ph.D.

Date of birth: 15 February 1990
Current location: Gothenburg, Sweden (open to relocation)

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I am a **software developer** and a **computer scientist** dedicated to improving software quality with **static analysis**, **formal verification** and **functional programming**. I hold a Ph.D. degree in computer science on the topic of **formal methods**. Over the past 10+ years I have worked as a software developer in **cloud**, **web**, **telecom** and **automotive**. I have worked with several different tech stacks, my favourite ones are **C**, **Python**, **Scala** and **Haskell**.

Work experience

[My LinkedIn profile](#)

Zenseact AB

February 2021 to now
Gothenburg, Sweden

Software developer

Zenseact develops an autonomous driving platform for Volvo Cars.

- Develop safety critical software components of self-driving cars in C, C++ and Ada.
- Scout for requirements, breakdown, refine and formalize.
- Integrate the SPARK verification toolchain into the company's codebase.
- Formally verify safety requirements of the core components in SPARK.

C C++ Python Ada SPARK

Ericsson AB

August 2019 to January 2021
Gothenburg, Sweden

Software developer

- Implemented new features for the control plane of [SGSN-MME](#) in Erlang.
- Helped to migrate Ericsson's [5G platform](#) from custom hardware to the telco cloud. Among other things, implemented a cloud-based storage and logging infrastructure for it.

Linux Erlang C Bash Python Kubernetes Docker

Chalmers University of Technology

September 2013 to September 2018
Gothenburg, Sweden

Doctoral researcher

- 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.
- 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
New York, USA

Applied scientist intern, [Automated Reasoning Group](#)

Implemented an experimental backend for [Tiro](#)s — a static analyzer of AWS virtual private cloud networks.

Scala Python Datalog Vampire Z3

Yandex Inc.

March 2011 to August 2013
Saint-Petersburg, Russia

Software developer

- 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
Saint-Petersburg, Russia

Software engineering intern

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

Lisp C Python Wireshark

Freelance

2005 to 2010
Remote

Web developer

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
Gothenburg, Sweden

[Chalmers University of Technology](#), Department of Computer Science

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 that they reason in. The applications include automation of proof assistants and static analysis of software and networks.

Automated theorem proving Formal methods First-order logic Static analysis Vampire

Master of science (M.Sc.)

September 2011 to July 2013
Saint-Petersburg, Russia

[Saint-Petersburg State University](#), Department of Applied Mathematics

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, Russia

[Saint-Petersburg State University](#), Department of Applied Mathematics

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

Source code generation Context-free grammars Algebraic data types Scheme

Public software projects

[My GitHub profile](#)

vampire

C++

An award-winning automated [theorem prover](#) for first-order logic.

scala-workflow

Scala

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

atp

Haskell

Haskell interface to automated theorem provers.

voogie

Haskell

A verification conditions generator for the Boogie intermediate verification language.

atomizer

Erlang

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

fire

Python

HTML

CoffeeScript

Docker

A submission system for homework assignments.