Evgenii Kotelnikov, Ph.D.

Date of birth: 15 February 1990

Current location: Gothenburg, Sweden (open to relocation)

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

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

Software developer

Gothenburg, Sweden

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

Software developer

Gothenburg, Sweden

- 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

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.
- 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 and Engineering

Gothenburg, Sweden

Thesis in computer science 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

St Petersburg University, Department of Applied Mathematics

Saint Petersburg, Russia

Thesis in computer science titled **"Syntactical Extensions of Scala for Effectful Computations"**

Scala | Metaprogramming | Monads | Computational effects

Bachelor of science (B.Sc.)

September 2007 to July 2011

St Petersburg University, Department of Applied Mathematics

Saint Petersburg, Russia

Thesis in computer science 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.

voogie Haskell

A verification conditions generator for the Boogie intermediate verification language.

scala-workflow Scala

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

atomizer Erlang

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

atp Haskell

Haskell interface to automated theorem provers.

fire Python | HTML | CoffeeScript | Docker

A submission system for homework assignments.