

ALEX DENISOV

Berlin, Germany
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WORK EXPERIENCE

Senior Software Engineer, GitHub, Inc

May 2021 - Present

Leading a team of several ICs to add Swift support for CodeQL.
Responsible for C/C++/Swift support for CodeQL platform.
Maintaining CodeQL's low-level tracer tooling on macOS (Intel/Apple Silicon).
Built GPU-based CodeQL evaluator (hackathon project).
<https://codeql.github.com>

Co-founder, DragonRuby LLC

Sep 2019 - Present

Side-project. Maintaining LLVM-based Ruby compiler (RubyMotion), building a new MLIR-based Ruby compiler.
<https://dragonruby.org>

Senior Software Engineer, ShiftLeft GmbH

Sep 2019 - April, 2021

Responsible for LLVM frontend for the static analysis platform Ocular.
<https://www.shiftright.io/ocular/>

Senior Software Engineer, Planetary Transportation Systems GmbH

Mar 2018 - Aug 2019

Responsible for the quality of the software running on spacecraft.
<https://www.pts.space>

Contractor, RubyMotion LLC

Dec 2018 - Aug 2019

Maintaining LLVM-based Ruby compiler for iOS/macOS/Android platforms.
<https://www.rubymotion.com>

Software development, Various companies

2010 - 2018

Two startups, three consulting firms. Building iOS apps in ObjC/Swift, backends in Ruby/JS/TypeScript.
Maintaining production systems.

EDUCATION

Open International University of Human Development, Donetsk, Ukraine

2006 - 2010

Bachelor, Business Administration and Management

Computer Academy, Donetsk, Ukraine

2006 - 2011

Bachelor, Software Engineering

Coursera

Took a number of courses over the years: Google Project Management; Mathematics for Machine Learning: Linear Algebra; Compiler Construction; Automata Theory; From Nand to Tetris; Functional Programming Principles in Scala; Synapses, Neurons, and Brains

PUBLICATIONS

The 13th International Workshop on Mutation Analysis (ICST 2018)

Mull It Over: Mutation Testing Based on LLVM

Paper: <https://ieeexplore.ieee.org/document/8411727>

Preprint: <https://arxiv.org/abs/1908.01540>

PROGRAM COMMITTEE

International Workshop on Mutation Analysis (ICST 2020-2023)

<https://mutation-workshop.github.io/>

LLVM Developers Meeting (2020, 2021, 2023)

<https://llvm.org/devmtg/>

FOSDEM 2020, LLVM dev-room

<https://fosdem.org/2020/schedule/track/llvm/>

OPEN SOURCE

Mull Project, Author/Maintainer

Practical fault injection and mutation testing tool for C/C++

<https://github.com/mull-project/mull>

LLVM, Committer

A number of LLVM/Clang contributions

<https://lowlevelbits.org/nsvalue-and-boxed-expressions/>

<https://lowlevelbits.org/circular-containers-in-objective-c/>

<https://github.com/llvm/llvm-project/commits?author=AlexDenisov>

RECENT TALKS

EuroLLVM 2023

Compiling Ruby (with MLIR)

<https://www.youtube.com/watch?v=NfMX-dFMSr0>

LLVM Developers Meeting 2020

LLVM-based mutation testing for C and C++

<https://www.youtube.com/watch?v=DfoS9kdTWmI>

FOSDEM 2020, LLVM dev-room

LLVM meets Code Property Graphs

https://fosdem.org/2020/schedule/event/llvm_cpg/

EuroLLVM 2019

Building an LLVM-based tool: lessons learned

<https://www.youtube.com/watch?v=Yvj4G9B6pcU>

MORE LINKS

- <https://lowlevelbits.org>
- <https://scholar.google.com/citations?user=GR6eJosAAAAJ>
- <https://www.linkedin.com/in/alex-denisov-a29bab2a/>
- <https://github.com/AlexDenisov>
- <https://stackoverflow.com/users/829116/alexdenisov>
- https://twitter.com/1101_debian