
Arseniy Yurievich Zaostrovnykh <arseniy.zaostrovnykh@epfl.ch>

RESEARCH INTERESTS

My research is focused on verification. I try to combine formal methods with symbolic execution in order to reason about packet-processing software.

EDUCATION

École Polytechnique Fédérale de Lausanne, Switzerland - EPFL, Switzerland *2014-present*
PhD in Computer Science

- Advisors: Prof. George Candea (Dependable Systems Lab),
Prof. Katerina Argyraki (Network Architecture Lab)

Moscow Institute of Physics and Technology - MIPT, Russia *2012-2014*
MS of Applied Physics and Mathematics

- The Department of Radio Engineering and Cybernetics
- Specialized in *microprocessor design* and *parallelizing compilers*
- Graduation with honors

Moscow Institute of Physics and Technology - MIPT, Russia *2008-2012*
BS of Applied Physics and Mathematics

- The Department of Radio Engineering and Cybernetics
The main modules include General Physics, Theoretical Physics, Mathematics, Computational Mathematics, Computer Science, Operating Systems, Object Oriented Programming, Information Security, etc.
- *GPA: 5 out of 5 (top 1%)*

Robotics summer school in Imperial College of London, sponsored by Skolkovo *2012*

A NatCracker laboratory [http://ncedu.ru/moscow/mipt\(rus\)](http://ncedu.ru/moscow/mipt(rus)) *2010-2011*

Successfully taken Stanford on-line courses:

- Machine Learning (Andrew Ng)
- Algorithms Design and Analysis Part I (Tim Roughgarden)
- Compilers (Alex Aiken)

WORK AND PRACTICAL EXPERIENCE

- École Polytechnique Fédérale de Lausanne(EPFL), Switzerland** 2014-present
- Research towards software dataplane verification.
- Google, California, USA** 2015
- Development event tracking for network routing calculation profiling.
- Samsung Research Institute, Moscow, Russia** 2014
- Developed an AOT compiler of ECMAScript(JS) subset.
- Intel Corporation, Moscow, Russia** 2010-2013
- Developed a performance optimizing binary translator from x86 to a new fine-grained parallel architecture.
- OJS Co. “Institute of Electronic Control Computers”, Moscow, Russia** 2012
- Developed a technology for components of a base model of prosthesis, controllable by brain impulses.
- MIPT-Intel Laboratory, Moscow, Russia** 2009-2013
- Used QT to develop an open source graph-visualizer
<http://code.google.com/p/mipt-vis/>
 - Mentored a student group in the development of an open source Scheme compiler
<http://code.google.com/p/mipt-scheme-compiler/>
- A NetCracker laboratory, Moscow, Russia** 2010-2011
- Used GWT to develop an open source music-listening web service
<https://github.com/necto/natty>

PUBLICATIONS

- **Developing Formally Verified Software Middleboxes with Vigor (accepted)** ACM SOSP, 2019
Arseniy Zaostrovnykh, Solal Pirelli, Rishabh Iyer, Luis Pedrosa, Matteo Rizzo, Katerina Argyraki, George Candea
- **Performance contracts for software network functions** USENIX NSDI, 2019
Rishabh Iyer, Luis Pedrosa, Arseniy Zaostrovnykh, Solal Pirelli, Katerina Argyraki, George Candea
- **Automated synthesis of adversarial workloads for network functions** ACM SIGCOMM, 2018
Luis Pedrosa, Rishabh Iyer, Arseniy Zaostrovnykh, Jonas Fietz, Katerina Argyraki
- **A formally verified NAT stack** ACM SIGCOMM, KBNets workshop, 2018 best paper
Solal Pirelli, Arseniy Zaostrovnykh, George Candea
- **A formally verified NAT** ACM SIGCOMM, 2017
Arseniy Zaostrovnykh, Solal Pirelli, Luis Pedrosa, Katerina Argyraki, George Candea

SKILLS PROFILE

Development skills:

- Understand formal methods, computer networks, computer architecture, operating systems, algorithm effectiveness, computational geometry, object-oriented and functional programming.
- Have background in classic compiler optimizations.
- Experience in a project with millions lines of source code.
- Used the following tools, languages and technologies: C++ (2 years of industrial, 10 years of academic experience) and C (3 years of industrial experience, 4 years of academic experience), CoQ, VeriFast, QT, Java SE/EE(1 year of academic exp.)/ME, XML, \LaTeX , x86/AVR ASM, Git, Subversion, GWT, Maven 2, Bash, Scheme, Common Lisp, SLIME, OpenGL, OpenMP, MPI, AJAX, CSS, SQL (Postgres/Oracle), NoSQL(MongoDB).
- Linux (Ubuntu, Arch) and Android operating systems.

Academic background:

- Taught a compilers course for sophomores (2013-2014).
- First and second prizes in regional math and physics competitions (2007-2008).

Languages:

- Russian - native
- English - fluent (IELTS 7.0, TOEFL 96)
- French - advanced
- German - basic

*Last updated: July 23, 2019
References are available upon request*