Alexander Fokin

CONTACT INFORMATION

Current Location: Moscow, Russian Federation
Mobile: +7 915 3705385
E-mail: apfokin@gmail.com
LinkedIn: `https://linkedin.com/in/retgone`

PROFESSIONAL EXPERIENCE

ISO C++ Standards Committee

C++ Expert   **May 2016 - present**

Currently serving as a chairman of the C++ standards working group of the Russian National Body.

Yandex, Moscow, Russian Federation

Head of Search Components	**October 2015 - present**
Head of Search Platform Evolution Group	**April 2015 - October 2015**
Senior Search Engineer	**October 2014 - April 2015**

Currently responsible for Yandex search runtime, managing a team of some 20 developers.

Was hired as an engineer to work on the next generation index that would speed up the search process. The scope of the project was subsequently expanded to what effectively amounts to rewriting most of the search runtime. Wrote most of the index i/o and runtime code, and successfully deployed it in several search verticals, resulting both in performance and quality gains. Currently working on dropping most of the legacy code and unifying our runtime using the newly developed technologies, with a goal of significantly growing our search database.

As a side project have started an effort to revitalize our code base, replacing dated code and generally bringing order to where chaos has previously reigned. Ported clang's libcxx to MSVC as part of this effort, thus being instrumental in our switch to C++11 STL.

Also currently leading a project to improve the way programming interviews are performed at Yandex. Did a number of presentations on best interviewing practices for different branches of the company, then worked on developing new rules for our interviewing process. Was subsequently charged with implementing these rules on the company scale. Did a lot of research into what constituted a good interview, gathered a team of skilled interviewers, organized interviewing training for employees, and optimized the interviewing process in a manner that was both transparent for all parties involved and was meeting our KPIs.

Network Optix, Moscow, Russian Federation, then Los Angeles, USA

Senior Software Engineer   **October 2011 - July 2014**

Designed and implemented initial version of the HD Witness client application, making sure that its high-level architecture is sound and extensible. As of 2016, five years down the road, most of the foundational code is still unchanged, with a bunch of features added on top.

As the person solely responsible for the client-facing part of the system, I made no compromises when it came to delivering the best experience for our users. After 1.0 release various sources have described HD Witness as the most user-friendly and aesthetically pleasing video management system on the market, which has helped the company to gain a competitive edge.

Was subsequently charged with management of the front-end development team. Other responsibilities included design of public APIs and development of generic C++ libraries that were used internally.

Combild, Moscow, Russian Federation

Software Development Lead, Co-founder   **June 2010 - October 2011**

Combild was started to create an IT service management (ITSM) system that would target small companies and IT outsourcers, an underserved market niche for which competing solutions were either too expensive or excessively complex. Combild was to offer a lightweight and user-friendly ITSM system with a licensing model specifically targeted at small companies and IT oursourcers.

At the time all other solutions on the market were either too bulky and hard to maintain, or were not suitable for the business model of IT outsourcers. Frustrated with the state of things, we have decided to roll out our own product.

My role was to lay out the initial product architecture, to implement the first demonstrable version, and then to work with customers to prioritize and clarify the features and to manage a small development team.

Select LTD, Moscow, Russian Federation

Software Engineer   **July 2009 - September 2011**

Was mainly working on SmartDec, a native code decompiler. Laid out the architecture of the decompiler and implemented several frontend and backend plugins, including support for different x86 and PIC assembly input formats. Was responsible for devising novel algorithms that would improve the quality of the decompiled code and would allow for reconstruction of C++-specific constructs. This effort has led to several publications on international conferences on reverse engineering. Detailed description of the decompiler is available at `http://decompilation.info`.

Have also implemented a form recognition toolkit that was subsequently used in some of the Moscow schools for test checking.

Was additionally working on `http://mathege.ru`, a national mathematics exam portal developed in Java using Apache Struts web framework. Did both frontend and backend development and have implemented a LATEX to html converter that was used for importing problems into the system.

Institute for System Programming of the Russian Academy of Sciences, Moscow, Russian Federation

Software Engineer   **September 2007 - September 2008**

Was working in a team developing a framework for dynamic analysis of binary code. Using C++ metaprogramming techniques implemented a disassembler for MIPS64 architecture that significantly outperformed all other disassemblers for this architecture.

Intel, Moscow, Russian Federation

Software Engineering Intern   **February 2007 - April 2008**

Was researching computer vision algorithms and have implemented a panorama stitching application. Description is available at `https://github.com/retgone/prec`.

Was also charged with the development of Ruby bindings for Intel's Integrated Performance Primitives library. Description is available at `https://github.com/retgone/ipp4r`.

Personal Projects

I am an avid programmer and I enjoy writing code in my free time. Throughout the years I have done a lot freelance work and have finished several personal projects, including a real-time ray-tracing engine, a virtual mouse driver for Windows XP, a tool for automatic reconstruction of 3d solids from engineering drawings and a lot of OpenGL demos. For more information check out my github page (`https://github.com/retgone`).

EDUCATION	**Department of Computational Mathematics and Cybernetics, Moscow State University**, Moscow, Russian Federation

Specialist degree in Applied Mathematics and Computer Science   **September 2004 - July 2009**

Advisor: Professor Alexander Chernov
Thesis: Reconstruction of Class Hierarchies for Decompilation of C++ Programs
Graduated with high honors. Diploma GPA is 5.0 out of 5.0.

Graduate School of Science and Engineering, Chuo University, Tokyo, Japan

Full-time non-degree student   **September 2008 - March 2009**

Advisor: Professor Mitsunori Makino
Was studying Japanese, working on algorithms for real-time ray tracing and implemented a real-time ray tracer for use with CAVE automatic virtual environment.

PUBLICATIONS

A. Fokin, E. Derevenetc, A. Chernov and K. Troshina. "SmartDec: Approaching C++ Decompilation", in proceedings of the *18th Working Conference on Reverse Engineering*, pp. 347-356, 2011.

A. Fokin, K. Troshina and A. Chernov. "Reconstruction of Class Hierarchies for Decompilation of C++ Programs", in proceedings of the *14th European Conference on Software Maintenance and Reengineering*, pp. 249-252, 2010.

K. Troshina, A. Chernov and A. Fokin. "Profile-Based Type Reconstruction for Decompilation", in proceedings of the *17th International Conference on Program Comprehension*, pp. 263-267, 2009.

HONOURS,
AWARDS AND
TEST SCORES

TOEFL iBT, 111/120, Moscow, 2010.

M.V. Lomonosov Scholarship for Academic Excellence, Moscow, 2006-2009.

ABBYY Collegiate Mathematics Competition, 1st place, Moscow, 2006.

8th Moscow Collegiate Programming Contest, 9th place, Moscow, 2006.

7th Moscow Collegiate Programming Contest, 11th place, Moscow, 2005.

Unified State Exam in Mathematics, 100/100 (nationwide top), Izhevsk, 2004.

LANGUAGES

Russian: native.
English: fluent.
Japanese: intermediate.