

# Ilya Berezhnyuk

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## SUMMARY

Twenty years of application and system programming in C/C++.

Eight years of experience in C#; familiar with Java, Python and Perl.

Recent areas:

- Offline large-scale data processing (MS Cosmos/Scope/ObjectStore, Apache Spark / Yarn / HDFS).
- Distributed indexed data store with real-time high throughput update and lookup (MS ObjectStore, Apache ZooKeeper & Kafka).

Other:

- Search engine development, data aggregation, ranking and visualization.
- Java machine development (Apache Harmony).
- Security software certification and development.
- Syntax analysis in high-level programming languages.

## EDUCATION

Mathematician-engineer (MS equivalent) in Applied Mathematics, graduated in February 2001.

Specialization: system software.

Moscow State aviation institute (technical university), Moscow, Russian Federation.

Special courses included: Algorithmic languages and programming, Numerical methods and algorithms, Database engineering, Networking, Large software engineering technologies, Tools for applied systems development, Multimedia technologies, Computer graphics, Logical programming, Modern information technologies.

## EXPERIENCE

SDE2, December 2010 to August 2013.

Senior SDE, September 2013 to August 2016.

Principal SDE, September 2016 to Present.

[Microsoft](#), Bellevue, WA, USA.

- Currently leading design and development of a unified index building platform for modern Web and Multimedia search tiers (and potentially other search verticals).
- Led design and development of data preparation and management layer of a new enhanced platform for injecting ranking signals into Bing serving tiers.
- Participated in adopting ZooKeeper and Kafka in OneDrive search backend.
- Contributed to migrating inverted index building to map-reduce (MS Cosmos).
- Contributed to [enhanced OneDrive search](#).
- Worked on building [Bing](#) document index: contributed to index growth, performance optimization, migration to map-reduce index building (MS Cosmos), ranking improvements and storage optimization.
- Contributed to improving [Bing](#) freshness and reducing operational costs.

Leading Programmer, June 2008 to March 2010.

Lead of Link Index Team, April 2010 to December 2010.

[Rambler](#), Moscow, Russian Federation.

- Participated in QueryBroker project (mid-level aggregator for search verticals).
- Developed search/rotation system for thematic banners.
- Participated in development of link matrix visualizer.
- Improving link index building procedure.
- Improving link rating algorithms.

Sr. Software Engineer, December 2005 to June 2008.

[Intel Corporation](#), Moscow site, Russian Federation.

- Open-source Java virtual machine development ([Apache Harmony](#) project), committer status
  - JVM Tool Interface development
  - JVM interface for native code debugging ([NCAI](#))
  - JVM threading
  - JVM signals/exceptions handling
  - JVM crash handling module development

Sr. Engineer, November 2004 to December 2004;

Leading Engineer-Programmer, December 2004 to December 2005.

[“RNT” JSC](#), Moscow, Russian Federation.

- Participated in development of complex analyzer for C/C++/Java software.

- Participated in software certification and dynamical analysis.

Engineer, April 2004 to October 2004.

[Korolev Laboratory of Information Objects \(KLIO\)](#), Korolev, Moscow Region, Russian Federation.

- Developed analyzer for Java binary files for software certification purposes.
- Developed syntax analyzer for Java language.

Junior Consultant, March 2001 to December 2001;

Expert, January 2002 to April 2003;

Senior Engineer, April 2003 to April 2004.

[Information Security Center](#), Yubileiny, Moscow Region, Russian Federation.

- Participated in certification of information security system 'Dallas Lock 3.1'.
- Developed network packet sniffer for Windows used for software certification.
- Developed port scanner for Windows.
- Developed information security system eLock 1.0 working in BIOS environment.
- Developed USB driver for DOS and BIOS environment.
- Developed driver for USB dongles eToken and GuardantID for DOS and BIOS environment.
- Developed information security system eLock 2.0 for use with USB dongles GuardantID.
- Developed information security system eLock 2.1 for use with USB dongles GuardantID and eToken.
- Developed remote debugging tool for BIOS debugging purposes.

## COMPUTER SKILLS

**Platforms:** Windows, Linux/FreeBSD, DOS & BIOS

**Software:** MSVC, GCC, GDB, CVS/SVN/GIT, Vim/Emacs

**Languages:** C/C++, C#, Python, Perl, Java, Bash

**Low-level:** USB, PCI, I2C, IDE, UART

## OTHER SKILLS

**Microcontrollers:**

- Programming of Intel x51, AVR.
- Programming of Motorola MC68, built a device with basic functionality of a USB dongle.

**Language:** Russian, English.

## PERSONAL

Dependable, somewhat pedantic. Quick learner. Tend to do things in person even when delegating is reasonable (working on this one). Curious about new developments in science and technology.

Hobbies: fishing, snowboarding, homebrewing, baking, electronics, Arduino & ESP8266&32, and few other sorts of DIY.