

Artem Melentyev

Software Developer & Researcher

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Education

- 2009–2012 **PhD in CS**, unfinished, *Ural Federal University*, Yekaterinburg, Russia.
Topic: Construction of extensible compilers
Supervisors: Alexander Klepinin, Mikhail Volkov
Graduated with dissertation presentation, but not defended yet.
- 2007–2009 **Master of CS**, *Ural State University*, Yekaterinburg, Russia.
Thesis title: The methods and technologies of programming languages extending
Supervisor: Alexander Klepinin
GPA: 4.79 / 5 = 96%.
- 2004–2007 **Bachelor of CS**, *Ural State University*, Yekaterinburg, Russia.
Thesis title: Cross-platform module of checking solutions for programming contests
Supervisor: Alexander Klepinin
GPA: 4.75 / 5 = 95%

Publications

- C. Cotrini, Y. Gurevich, O. Lahav, and A. Melentyev, “Primal infon logic with conjunctions as sets,” in *Theoretical Computer Science*, vol. 8705 of *Lecture Notes in Computer Science*, pp. 236–249, Springer Berlin Heidelberg, 2014. doi:10.1007/978-3-662-44602-7_19.
- A. Melentyev, “Java modular extension for Operator Overloading,” *IJPLA*, vol. 4, no. 2, 2014. doi:10.5121/ijpla.2014.4201.
- A. V. Klepinin and A. A. Melentyev, “Integration of semantic verifiers into Java language compilers,” *Automatic Control and Computer Sciences*, vol. 45, no. 7, pp. 408–412, 2011. doi:10.3103/S014641161107008X.

Research interests: compilers, programming languages, algorithms, logic, verification

Work experience

- 16 Jun 2014 – **Remote Software Developer**, *Riskmatch LLC*, NY, USA.
now Develop analytical platform for insurance brokers and carriers. Full stack remote developer. Groovy, Grails, MySQL, JavaScript, CoffeScript, AngularJS, AWS, Distributed systems.
- 19 Nov 2012 – **Consulting Researcher**, *Microsoft Research*.
22 May 2013 Adapted Distributed Knowledge Authorization Language (DKAL) research project for business needs.
<http://dkal.codeplex.com>
- 27 Jun – **Research Intern**, *Microsoft Research*, Redmond, WA, USA.
- 23 Sep 2011 *Mentors:* Madan Musuvathi and Sumit Gulwani, RiSE, MSR.
Researched and implemented autocomplete system for text sequences input.
- 2 Oct 2009 - **Research fellow**, *Ural Federal University*, Yekaterinburg, Russia.
now Got 2 Microsoft Research grants to work on Distributed Knowledge Authorization Language under supervision of Yuri Gurevich. Visited Microsoft Research Redmond 2 times:
July 16 – August 31 2012: New Propositional Primal Infon Logic engines was implemented for DKAL.
April 11 – May 08 2011: The second prototype of DKAL engine with modular architecture was developed together with Guido de Caso.
- May 2008 – **Opensource Java developer**, *XWiki SAS*, France.
Jan 2009 Remote developer of XWiki platform. Technologies: Hibernate, Jackrabbit, Plexus, SableCC, Struts, Velocity, Groovy, Jetty, Maven, PostgreSQL, MySQL, HSQL.
Created XWiki Query Language (based on JPQL syntax) for quering XWiki documents, objects and properties.
Article about my work at XWiki: <http://xwiki.com/xwiki/bin/view/Blog/AboutArtem>

In 2005–2007 I was accepted and successfully finished **Google Summer of Code** (GSoC) programs for XWiki mentoring organization (Java based, powerful wiki web system):

- Summer 2007 **Google Summer of Code student**, *XWiki*, Storage improvements.
<http://dev.xwiki.org/xwiki/bin/view/GoogleSummerOfCode/Storage+Improvements>
Added: minor edit feature, recycle bin for deleted documents, new versioning system for documents.
- Summer 2006 **Google Summer of Code student**, *XWiki*, Java Content Repository Store.
Implemented an experimental storage system based on Java Content Repository (JSR-170)

Summer 2005 **Google Summer of Code student**, XWiki, Independent Query Language project.
Implemented XPath to SQL translator based on Jackrabbit query engine

Jan 2005 – **Java developer**, *Naumen.com*, Yekaterinburg, Russia.

May 2005 Created a web system for evaluating government tenders. Technologies: Hibernate, Millstone, Tomcat, ANT, PostgreSQL.
Servers admin (RHEL, Debian). The project is for <http://fasi.gov.ru/>

Achievements

Participation in programming contests:

2014 **Kotlin Challenge**.

27th place: <http://kotlin.jetbrains.org/challenge/tour/tour.jsp?tour=com.jetbrains.kotlin.2014.semifinal>

2006 **ACM International Collegiate Programming Contest *World Finals 2006***, San Antonio, Texas, USA.
<http://icpc.baylor.edu/community/results-2006> (Ural State University team)

2005 **ACM International Collegiate Programming Contest Semi Finals 2005**, St. Petersburg, Russia.
5th place of 172 total: <http://neerc.ifmo.ru/past/2005/standings.html>

Certificates

- Coursera.org: Stanford's Algorithms: Design and Analysis Part 1 and Part 2; Princeton's Algorithms, Part 1 and Part 2 (Java); Compilers (Java, with distinction); Cryptography I; Functional Programming Principles in Scala (with distinction); Principles of Reactive Programming (in Scala, with distinction); Introduction to Logic; Machine Learning (Octave, Matlab); Game Theory (with distinction); Introduction to Databases (SQL); Software Engineering for Software as a Service (SaaS, Ruby); Programming Languages (Ruby, SML, Racket); Linear and Integer Programming (with distinction); Web Intelligence and Big Data (Python, with distinction); Programming Mobile Applications for Android Handheld Systems: Part 1 and Part 2
- Cisco: Certified Network Associate (CCNA), Fundamentals of Java Programming

Conferences, Schools

1–3 Sep 2014 **Theoretical Computer Science conference (TCS2014)**, Rome, Italy.

24–27 Nov 2011 **Lector at Computer Science E-Days Application 2011 School**, Yekaterinburg, Russia.

12–13 May 2011 **Referee (additional reviewer) at Spring/Summer Young Researchers' Colloquium on Software Engineering (SYRCoSE 2011)**, Yekaterinburg, Russia.

28 Jun – 3 Jul 2010 **Microsoft Research Summer School 2010**, Cambridge, UK.

14–16 Jun 2010 **Workshop on Program Semantics, Specification and Verification (PSSV 2010)**, Kazan, Russia.

Projects

DKAL, Distributed Knowledge Authorization Language, <http://dkal.codeplex.com/>.

DKAL is a logic-based language for managing policies and trust in distributed scenarios including federated scenarios. It was invented by Yuri Gurevich from Microsoft Research. Implemented by Michal Moskal (1st version), Guido de Caso and me (2nd version), and others. I'm maintainer of DKAL project code base now. I host <http://rise4fun.com/dkal> online demo as webservice in a cloud.

Java-OO, Java Operator Overloading as compiler plugin, <http://amelentev.github.io/java-oo>.

Modular extension (plugin) for Java language compilers and IDEs which adds operator overloading feature in Java language while preserving backward compatibility.

Works with JavaC, all major Java IDEs (Netbeans, Eclipse and IntelliJ IDEA).

JUAST, Java Unified Abstract Syntax Tree, <http://bitbucket.org/amelentev/juast/>.

Abstract: This work introduces one method for source code static semantic analysis at compilation time directly within standard compilers. The method is implemented via unified integration with Java compilers to get full access to Abstract Syntax Tree (AST) of compiled files after semantic analysis stage of compilation process. The unified integration is implemented by common AST interfaces and adapters to AST implementations of JavaC and Eclipse Compiler for Java (ecj) compilers. This method provides transparent integration with Eclipse and Netbeans IDE without a need for any special plugins. Several examples of program verification rules are presented to demonstrate the method.

The project made impact on projectlombok.org development: <http://goo.gl/WxrCx>

Programming Languages

Java, Groovy, F# very good
C/C++, C#, Kotlin, Scala, JavaScript, CoffeeScript good
Ruby, Python hobby