

Center for Algorithms and Interactive Scientific Software
 City College of New York
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Legal Status Permanent resident of the United States (green card holder), Russian citizen

Education **The Graduate Center of the City University of New York** **New York City, NY**
2001–2005 Ph.D. in Computer Science under Distinguished Professor Sergei Artemov

Moscow State University **Moscow, Russia**
1993–1998 **Master of Sciences in Mathematics (Diploma with honours)**, Department of Mechanics and Mathematics, Division of Mathematics, major — Mathematics and Applied Mathematics
1994–1996 **Computer Academy, Moscow State University** **Moscow, Russia**

Research Interests Software reliability, testing, and verification. Systems for computer-aided formal reasoning, higher-order theorem provers, and logical frameworks. Automatic proof search.

Research

Experience **CAISS, City College of New York** **New York City, NY**
Since Jan. 2006 **Research Associate**

Development of Caiss-Stat — a statistical package which is much easier to learn and use than other mainstream packages (Statistica, SPSS, JMP6, etc).
 Connecting Caiss-Stat to open-source R statistical package.
 Work on Magnus computational algebra package.
 Cryptographic uses of Magnus.
 Development of a non-hierarchical tag-cloud based file system which is transparent to legacy software and uses a transparent embedding into a regular file system for file storage.

California Institute of Technology **Pasadena, CA**
June–July 2005 **Visitor** with Prof. Jason Hickey

Revised Jprover, the automatic prover for first-order intuitionistic logic, a part of the MetaPRL system.
 Made substantial speed improvements, added support for modal logic.
 Devised and implemented support for logic with justified common knowledge.
 Devised and implemented a standalone tableau-based prover for logic of proofs.

Microsoft Research **Redmond, WA**
June–Sept. 2002 **Intern** with Wolfram Schulte (Foundations of Software Engineering group)

Developed a tool for automated test case generation for a given executable AsmL-specification. The test case generation was based on run-time information about path coverage in a specification.

Moscow State University **Moscow, Russia**
1995–2001 Department of Mathematical Logic and Theory of Algorithms, Laboratory for Logical Problems in Computer Science. Advisors: Prof. Sergei Artemov, Assistant Prof. Vladimir Krupski.

1998–2001 Efficiency improvements in MetaPRL.

May 1998 **Diploma Thesis:** *Theory of Random Access Memory in NuPRL.*

1995–1997 Participated in the development of a compiler test suite for C++ standard compliance, under Prof. Vladimir Sukhomlin.

Open Mining Research Institute**Chelyabinsk, Russia**

1993 Developed modelling software for minimizing movement of gangue in excavations (with Valeriy Nechunaev). This work was done under contract with the open-pit mine “Borodinskiy,” Krasnoyarsk, Russia.

Teaching**Experience The Graduate Center of The City University of New York New York City, NY**

Spring 2005 **TA**, graduate CS course “Logical Foundations of Artificial Intelligence”

The City College of The City University of New York**New York City, NY**

Spring 2005 **TA**, undergraduate CS course “Programming Language Paradigms”

Fall 2003 **Instructor**, undergraduate CS course “Introduction to Programming and Computer Science”

Summer 2003 **Instructor**, undergraduate CS course “Algorithms”

Spring 2003 **Instructor**, undergraduate Math course “Calculus I”

Work**Experience New York City College of Technology, CUNY New York City, NY**

2002–2003 Self-Regulatory Learning Project:

Developed a system for self-evaluation of learning progress; platforms: PocketPC and Microsoft Outlook.

TrustLink**Moscow, Russia/Stockholm, Sweden**

2000–2001 **Software Analyst**: Designed and implemented data-synchronization subsystems for several projects, spanning PalmOS, EPOC, PocketPC and PC platforms.

I was actually hired as a Junior Developer but in a few months was promoted to an Analyst position.

Metron, family business**Chelyabinsk, Russia**

1991–1998 **Lead Developer**: Developed a number of accounting systems for small-sized companies (with my father). This family business was, and remains so far, the main source of income for my parents.

Publications

Gilber Baumslag, Yegor Brukhov, Benjamin Fine, Gerhard Rosenberger.

Encryption methods using formal power series rings.

Prepublicacions del Centre de Recerca Matemàtica; 725, 2006/2007

Yegor Bryukhov. Integration of Decision Procedures into High-Order Interactive Provers.

PhD Thesis. The Graduate Center of the City University of New York, 2006.

Yegor Bryukhov. Automatic Proof Search in Logic of Justified Common Knowledge.

Accepted to the 4th Methods for Modalities Workshop (M4M’05).

Natalia Novak and Yegor Bryukhov. Implementing the Calculus of Inductive Constructions in the MetaPRL framework. In Konrad Slind, editor, *17th International Conference on Theorem Proving in Higher Order Logics (TPHOLs 2004)*. *Emerging Trends Proceedings*, pages 153–164. University of Utah, 2004.

Yegor Bryukhov, Alexei Kopylov, Vladimir Krupski, and Aleksey Nogin. Implementing and Automating Basic Number Theory in MetaPRL Proof Assistant. In David Basin and Burkhart Wolff, editors, *16th International Conference on theorem Proving in Higher Order Logics (TPHOLs 2003)*. *Emerging Trends Proceedings*, pages 29–39. Universität Freiburg, 2003.

Jason Hickey, Aleksey Nogin, Robert L. Constable, Brian E. Aydemir, Eli Barzilay, Yegor Bryukhov, Richard Eaton, Adam Granicz, Alexei Kopylov, Christoph Kreitz, Vladimir N. Krupski, Lori Lorigo, Stephan Schmitt, Carl Witty, and Xin Yu. MetaPRL — A Modular Logical Environment. In David Basin and Burkhart Wolff, editors, *Proceedings of the 16th International Conference on Theorem Proving in Higher Order Logics (TPHOLs 2003)*, volume 2758 of *Lecture Notes in Computer Science*, pages 287–303. Springer-Verlag, 2003.

Online

Publications Jason Hickey, Brian Aydemir, Yegor Bryukhov, Alexei Kopylov, Aleksey Nogin, and Xin Yu. A listing of MetaPRL theories. <http://metaprl.org/theories.pdf>

Awards

1993 Russian Mathematical Olympiad, Diploma of IInd Degree (“silver medal”)

1992 Inter-Republic Mathematical Olympiad, Diploma of IIIrd Degree (“bronze medal”)

Talks

Nov 2004 1st Annual New York Graduate Student Logic Conference, St. Francis College, Brooklyn, NY

Sep 2004 Theorem Proving in Higher Order Logics, 17th International Conference, Park City, UT

Mar 2002 The PRL Seminar, Cornell University, Ithaca, NY

Academic and Community Service

Since 2002 Organizational support of Computer Science Colloquium and Logic Colloquium at the Graduate Center, CUNY