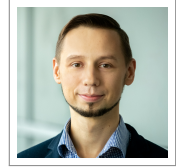


# Artem Pelenitsyn

## Curriculum Vitæ

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### Education

- 2003–2007 **B.Sc. in Applied Mathematics and Computer Science**, *Southern Federal University*, Rostov-na-Donu, Russia, [link to the transcript](#).  
Major: Foundations and Software Engineering for Computer Science
- 2007–2009 **M.Sc. in Applied Mathematics and Computer Science**, *Southern Federal University*, Rostov-na-Donu, Russia, [link to the transcript](#).  
Major: Foundations and Software Engineering for Computer Science

### Master thesis

title *BMS-algorithm and its application to decoding*  
supervisor Prof. V.M. Deundyak

### Research interests

Statically typed functional programming.

Mix-in of languages with different paradigms, in particular by the way of eDSLs. Currently working on a Datalog-like environment on top of the Julia programming language.

### Experience (summary)

#### Occupation

- 2018–present **PhD student**, *Northeastern U.*, Boston, USA.
- Fall 2017 **Research assistant at Programming Research Laboratory**, *Czech Technical University*, Prague, Czech Republic.
- Spring 2017 **Research assistant at Programming Research Laboratory**, *Northeastern University*, Boston, USA.
- 2010–2011, 2012–2017 **Assistant professor, lecturer**, *Southern Federal University*, Rostov-na-Donu, Russia.

### Publications

#### Peer-reviewed International

- Julia Subtyping: a Rational Reconstruction (with F. Zappa Nardelli, J. Belyakova, B. Chung, J. Bezanson, J. Vitek) // In: Proc. ACM Program. Lang., Vol. 2, Issue OOPSLA, 2018. DOI: 10.1145/3276483 [\[PDF\]](#)
- Functional Parser of Markdown Language Based on Monad Combining and Monoidal Source Stream Representation (with G.Lukyanov) // In: Itsykson V., Scedrov A., Zakharov V. (eds) Tools and Methods of Program Analysis. TMPA 2017. CCIS, vol 779, pp. 90–101. Springer, Cham. DOI: 10.1007/978-3-319-71734-0\_8 [\[PDF\]](#)

- Associated Types and Constraint Propagation for Generic Programming in Scala // “Programming and Computer Software” (english trans. of “Programmirovaniye”), 2015, No 4, pp. 224–230. DOI: 10.1134/S0361768815040064 [\[PDF\]](#).

#### Drafts

- Fuzzy-Testing A Subtyping Relation // 2018 [\[PDF\]](#)
- Handling Recursion in Generic Programming Using Closed Type Families (with A. Bolotina) // 2018 [\[PDF\]](#)

#### Russian

- Building parsers with algebraic effects // Proceedings of the First Russian Conference on Programming Languages and Compilers (PLC'17), 2017, pp. 185–190. With G. Lukyanov.
- Pelenitsyn A. Generic and meta- programming approach to design of software implementation of decoder for a class of algebraic geometry codes // “Prikladnaya informatika” (Applied computer science), 2012, No 2(38), pp. 60–70. [\[PDF\]](#), [link to the draft in English](#).
- Pelenitsyn A. On exploiting one metaprogramming technique. Journal of the Ivanovo Mathematical Society, 2011, No. 1(8), pp.79–84. [\[PDF\]](#).
- Deundyak V., Pelenitsyn A. Operator-theoretic approach to Berlekamp–Massey Algorithm, // Izvestia vuzov (Universities' Bulletin), Sev.-Kav. Region (Caucasus Region), Estestvennie Nauki (Sciences), 2011, No. 3. Pp. 11–13. [\[PDF\]](#).
- Mayevskiy A., Pelenitsyn A. Software Implementation of Algebraic-Geometry Codec using Sakata algorithm, // Izvestia Yufu (Southern Federal University Bulletin), Technology Sciences, 2008, No. 8, pp. 196–198. [\[PDF\]](#).

#### In Conference Transactions (Russian)

- Pelenitsyn A. On Implementation of n-Dimensional BMS-algorithm Using Generic Programming // Transactions of Scientific School of I.B. Simonenko, 2010, pp. 197–203. [\[PDF\]](#) (in Russian).
- Mayevskiy A., Pelenitsyn A. Methodic Supply and IT-infrastructure for Teaching Low-Level Programming // Transactions of Scientific-Methodic Conference “Modern Information Technologies in Education”, 2010, pp. 210–212. [\[PDF\]](#) (in Russian).
- Mayevskiy A., Pelenitsyn A. On Software Implementation of Algebraic-Geometry Codec using Sakata algorithm, // Transactions of X International Conference on Information Security and Safety, 2008, pp. 55–57.
- Pelenitsyn A. On Implementation of Decoder for a Class of Algebraic-Geometry Codes on Projective Curves using Sakata algorithm, // Transactions of the Conference “Week of Science” in Southern Federal University, 2008, vol. 1, pp. 55–57. [\[PDF\]](#) (in Russian).
- Bragilevsky V., Mihalkovich S., Pelenitsyn A. Building Web-portal for Information and Education purposes on Computing Department // Transactions of Scientific-Methodic Conference “Modern Information Technologies in Education”, 2008, pp. 48–49. [\[PDF\]](#) (in Russian).

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## Conference Talks: Research

### International

- 2018 **ACM SIGPLAN Symposium on Scala, 2018**, *Student Talk “Julia Subtyping Lessons Scala Could Learn”*, St. Louis, USA, 2018 (co-located with ICFP).  
[Link to the abstract](#), [link to the slides](#)
- 2018 **2nd Workshop on Machine Learning Techniques for Programming Languages**, *Talk “Can We Learn Some PL Theory? How To Make Use of a Corpus of Subtype Checks”*, Amsterdam, The Netherlands, 2018 (co-located with ECOOP/ISSTA).  
[Link to the abstract](#)

### Russian

- 2015 **Scientific Conference “Modern Information Technologies and IT-Education”**, *talk “C++17 Concepts in their relation to C++0x ones”*, Lomonosov Moscow State University, Faculty of Computational Mathematics and Cybernetics.  
[Link to the web-site](#) (in Russian), [link to the slides](#) (in Russian).

- 2012 **Research and Praticce Conference: Free Open Source Software “FOSS Lviv 2012”**, talk “*Software Implementation of Decoder For a Class Of Error-Correcting Codes on Algebraic Curves: Designing on a Basis of Generic Metaprogramming Templates*”, Ivan Franko National University of Lviv, Lviv, Ukraine. [Link to the web-site](#), [link to the slides \(in Russian\)](#).
- 2008 **Conference “Week of Science” in Southern Federal University**, talk “*On Implementation of Decoder for a Class of Algebraic-Geometry Codes on Projective Curves using Sakata algorithm*”, Rostov-na-Donu, Russia. [Link to the slides \(in Russian\)](#).

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## Seminar Talks

### In English

- 2019 **Parametricity Goes Gradual**, [CS7480](#), Northeastern U., USA. [Link to the slides](#)
- 2019 **A Spectrum of Type Soundness and Performance**, [CS7480](#), Northeastern U., USA. [Link to the slides](#)
- 2018 **Linear Haskell**, [PRL@PRG seminar](#), CVUT in Prague, Czechia. [Link to the slides](#)

### In Russian

- 2018 **Julia Subtyping: A Rational Reconstructions**, *Programming Languages and Compilers seminar*, MMCS, SFedU, Rostov-on-Don, Russia. [Link to the slides](#)
- 2016 **Functional Visitors**, *Programming Languages and Compilers seminar*, MMCS, SFedU, Rostov-on-Don, Russia. [Link to the slides: Part I, Part II](#)
- 2016 **Seminar on Galois Theory**, Institute for Mathematics, Mechanics and Computer Science, Southern Federal University, Rostov-na-Donu, [Link to the syllabus](#).
- 2011 **Minicourse on Galois Theory**, *Algebra seminar*, Faculty for Mathematics, Mechanics and Computer Science, Southern Federal University, Rostov-na-Donu.
- 2011 **Talks “Foundations for programming Languages”, “Automata and Formal Languages”**, *seminar for undergraduates “Introduction to Theoretical Computer Science”*, Faculty for Mathematics, Mechanics and Computer Science, Southern Federal University, Rostov-na-Donu. [Link to the slides \(in Russian\)](#)
- 2009 **Talk “Higher-Order Computations and Model Checking”**, *Interchair seminar on Computer Science*, Faculty for Mathematics, Mechanics and Computer Science, Southern Federal University, Rostov-na-Donu. [Link to the slides \(in Russian\)](#)
- 2009 **Talk “On multi-dimensional version of Berlekamp-Massey algorithm”**, *Seminar on Mathematical Methods in Information Safety and Security*, Faculty for Mathematics, Mechanics and Computer Science, Southern Federal University, Rostov-na-Donu. [Link to the slides \(in Russian\)](#)
- 2009 **Talk “Inductive Data Types in Programming”**, *Seminar on Category Theory*, Faculty for Mathematics, Mechanics and Computer Science, Southern Federal University, Rostov-na-Donu. [Link to the slides \(in Russian\)](#)
- 2008 **Talk “Spring Framework”**, *Rostov Java User Group*, Computing Center of Southern Federal University, Rostov-na-Donu. [Link to the slides \(xul format – to be run in Mozilla Firefox browser; in Russian\)](#)

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## Conference Talks: Education, Technology, Popular Science

### International

- 2014 **Joint International Program For Scientific and Technology Cooperation**, talk “*Computer Science Projects Developed inside (in connection with) Department of Mathematics, Mechanics and Computer Sciences / SFedU*”, Sao Paulo, Rio de Janeiro, Fortaleza, Brasil. [Info on university web-site \(in Russian\)](#), [link to the slides](#).

### Russian

- 2015 **Scientific Conference “Modern Information Technologies in Education”**, talk “*Store and publication assignment infrastructure for Moodle LMS*”, Institute for Mathematics, Mechanics and Computer Science in honour of I. I. Vorovich, Rostov-na-Donu, Russia.  
[Link to the web-site](#) (in Russian), [link to the slides](#) (in Russian).
- 2010 **Scientific-Methodic Conference “Modern Information Technologies in Education”**, talk “*Methodic Supply and IT-infrastructure for Teaching Low-Level Programming*”, Computing Center of Southern Federal University, Rostov-na-Donu, Russia.  
[Link to the web-site](#) (in Russian), [link to the slides](#) (in Russian).
- 2008 **International Conference on Information Security and Safety**, talk “*Building Web-portal for Information and Education purposes on Computing Department*”, Taganrog, Russia.  
[Link to the web-site](#), or [link to the expanded version in Russian](#).

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## Personal awards, scholarships, etc.

- 2012 **Participation in all-russian final of international student olympiad “IT-planet”**, competition: “Oracle Java Olympic”.  
[Link to Diploma for Participation](#) (in Russian)
- 2012 **Diploma for taking second place in regional stage of international student olympiad “IT-planet”**, competition: “Oracle Java Olympic”.  
[Link to Diploma scan](#) (in Russian)
- 2012 **Participation in the final stage of VI Open Programming Contest of Southern Federal University**, individual event.  
[Link to Diploma for Participation](#) (in Russian)
- 2011 **Scholarship from foundation “Education and Science on the South of Russia”**.  
[Link to the scholarship statement scan](#) (in Russian)
- 2011 **Rector’s commendation for participating in international accreditation of university teaching programmes**, *Southern Federal University*.  
[Link to scan of the commendation text](#) (in Russian)
- 2008 **Diploma for the best talk**, *student session during annual “Week of Science”, Southern Federal University*.  
[Link to Diploma scan](#) (in Russian)

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## Community Service

### Conference Organization

- [ETAPS '19](#) Web Co-Chair
- [ML4PL '18](#) Organizer
- [PLC '17](#) Organizer

### Book Translations (English to Russian)

- Dowek, Gilles, Levy, Jean-Jacques. *Introduction to the Theory of Programming Languages*. / Springer. 2011. Russian translation together with V. Bragilevskiy. Published by DMK Press in 2013. [Link to web page](#), [link to Google.Books preview](#).
- Bird, Richard. *Pearls of Functional Algorithm Design*. / Cambridge University Press. 2010. Russian translation together with V. Bragilevskiy. Published by DMK Press in 2013. [Link to web page](#), [link to Google.Books preview](#).

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## Experience (detailed)

### Teaching (at [Southern Federal University](#), mostly in Russian)

- Quantum Computations (lectures in English) — 2016 (fall).

- Computer Architecture (lectures & labs) — 2013–2016 (spring).
- Automata and Ciphers (lectures) — 2013–2016 (fall).
- Programming Basics labs — 2008, 2010–2012, 2014–2016.
- Programming Languages labs — 2008, 2010, 2012–2015 (fall).
- Functional Programming labs — 2011 (spring).
- Automata and Languages — 2010 (spring).
- Microprogramming/Assembler Programming labs — 2009 (fall).
- Geometry and Algebra — 2009 (fall).

#### Supervising student projects

- *Structuring Effectful Computations* — MSc G. Lukyanov, 2017, [\[PDF\]](#)
- *Generic Programming and Zippers* — A. Bolotina, 2017
- *Generation of algebraic data types descriptions based on JSON data via Template Haskell* — BSc O. Maroseev, 2016
- *Generation of type class instances based on instances of superclasses via GHC API* — BSc O. Filippkaya, 2016
- *Functional parser for Markdown using monad combination and monoidal representation of input* — BSc G. Lukianov, 2015
- *Deduction system for linear logic in Haskell* — BSc V. Pankov, 2015

#### Summer schools and other extra trainings

- 2018 **Programming Languages Mentoring Workshop @ ICFP**, St. Louis, USA, September 23rd 2018.  
[Link to the program.](#)
- 2017 **Oregon Programming Languages Summer School**, *Univeristy of Oregon*, Eugene, USA, June 26th to July 8th 2017.  
[Link to Official Web Page.](#)
- 2015 **Summer School on Generic and Effectful Programming**, *Department of Computer Science, Univeristy of Oxford*, St Anne's College, Oxford, 6th to 10th July 2015.  
[Link to Certificate of Attendance.](#) [Link to Official Web Page.](#)
- 2011 **Summer School “Algebra and Geometry”**, *Laboratory of Algebraic Geometry in the National Research University Higher School of Economics, Teachers' Training University of Yaroslavl'*, Yaroslavl', Russia.  
[Link to Certificate of Attendance](#) (in Russian). [Link to Official Web Page](#) (in Russian).
- 2010 **Microsoft Algorithms and Data Structures Summer School**, *Microsoft Research in Silicon Valey*, Saint-Petersburg, Russia.  
[Link to Certificate of Attendance.](#) [Link to Official Web Page.](#)
- 2010 **Winter School on Applied Mathematics and Computer Science**, *National Research University Higher School of Economics*, Moscow province, Russia.  
[Link to Certificate of Attendance](#) (in Russian).
- 2009 **Marktoberdorf Summer School “Logics and Languages for Reliability and Security”**, Marktoberdorf, Germany.  
[Letter of Acceptance.](#) [Link to Official Web Page.](#)

#### Participation in MOOC

- Coursera, 2013 **The Hardware/Software Interface**, *Prof. J.D. Noe*.  
[Link to Certificate](#)

- Coursera, 2012 **Quantum Mechanics and Quantum Computation**, Prof. U. Vazirani.  
[Link to Certificate](#)
- Coursera, 2012 **Functional Programming Principles in Scala**, Prof. M. Odersky.  
[Link to Certificate](#)
- Coursera, 2012 **Introduction to Logic**, Assoc. Prof. M. Genesereth.  
[Link to Certificate](#)
- Coursera, 2012 **Compilers**, Prof. A. Aiken.  
[Link to Certificate](#)
- Coursera, 2012 **Automata**, Prof. J. Ullman.  
[Link to Certificate](#)
- Coursera, 2012 **Cryptography I**, Prof. D. Boneh.  
[Link to Certificate](#)
- Coursera, 2012 **Algorithms I**, Assoc. Prof. T. Roughgarden.  
[Link to Certificate](#)

#### GHC Contributions

- [!538](#) (Ongoing) Make `-threaded` the default
- [bb3fa2d1](#) Remove some dependencies of the typechecker from the simplifier.
- [c6f4eb4f](#) Fix precision of `asinh/acosh/atanh` by making them primops
- [8546afc5](#) Documentation: “state transformer” → “state monad” / “ST” (whichever is meant)
- [14d88380](#) Update Unicode tables to v. 12 of the standard

#### Pet Projects

- [subtype-fuzzer](#) A fuzzer to test a tricky subtype relation as found in the Julia programming language / Haskell, 2018
- [chek-test](#) Remove groove from checking students' submissions / Haskell, 2016
- [cpp-mv-poly](#) C++-implementation of multivariate polynomials and the BMS-algorithm massively using C++ templates
- [mmcs-entrance](#) Generation of entrance diagrams (in PNG) in MMCS/SFedU from oficial data (XLS) / Java, 2010
- [lj-comments-notifier](#) Notifications about new comments in some livejournal.com-based blog / Haskell, 2011
- [Project Euler](#) Link to the participant record / Haskell (mostly), C++

[Me @ GitHub](#)

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### Computer skills

- Programming languages **Haskell**, C, C++(14), Java, Scala, Julia, Pascal, C#
- Markup, Scripting **L<sup>A</sup>T<sub>E</sub>X**, Markdown, HTML, CSS, JavaScript, PHP, bash, Regular expressions
- Environment Git, Make, Cabal, Stack, Emacs
- Operating systems **GNU/Linux family**, Windows family

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### Languages

- Russian Native
- English Advanced (IELTS exam band score 7.5 taken in 2012)

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## Interests

Classical literature Homer, Goethe, Joyce, Kafka, Camus, Sartr, Brodsky  
Art cinema Bergman, Fellini, Truffaut, Tarkovsky, Wenders, Kitano, von Trier

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## Extra info

Gender Male  
Pronouns His/him  
Marital status Single  
Current place of living Boston, USA  
Citizenship, Homeland Russia