# Artem Pelenitsyn

Curriculum Vitæ



## 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 Assoc. prof. V.M. Deundyak

#### Research interests

- Programming languages,
- Type systems and type theory,
- Functional programming,
- Mathematics of programming.

### Experience

#### Occupation

2010–2011, **Assistant professor, lecturer**, *Southern Federal University*, Rostov-na-Donu, Russia. 2012–2017

Spring 2017 Research assistant at Programming Research Laboratory, Northeastern University, Boston, MA, USA.

Fall 2017 Research assistant at Programming Research Laboratory, Czech Technical University, Prague, Czech Republic.

#### Teaching (at Southern Federal University)

- Quantum Computations (lectures) 2016 (fall).
- Computer Architecture (lectures & labs) 2013–2016 (spring).
- Automata and Ciphers (lectures) 2013–2016 (fall).
- o 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]
- o 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. Filippskaya, 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

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, University 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, The Hardware/Software Interface, Prof. J.D. Noe.
  - 2013 Link to Certificate
- Coursera, Quantum Mechanics and Quantum Computation, Prof. U. Vazirani.
  - 2012 Link to Certificate
- Coursera, Functional Programming Principles in Scala, Prof. M. Odersky.
  - 2012 Link to Certificate
- Coursera, Introduction to Logic, Assoc. Prof. M. Genesereth.
  - 2012 Link to Certificate
- Coursera, Compilers, Prof. A. Aiken.
  - 2012 Link to Certificate

Coursera, Automata, Prof. J. Ullman.

2012 Link to Certificate

Coursera, Cryptography I, Prof. D. Boneh.

2012 Link to Certificate

Coursera, Algorithms I, Assoc. Prof. T. Roughgarden.

2012 Link to Certificate

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 unversity 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)

Conference Talks: Science

2015 **Scientific Conference "Modern Information Technologies and IT-Education"**, *talk* "*C++17 Concepts in their relation to C++0x ones*", Lomonosov Moscov State University, Faculty of Computational Mathematics and Cybernetics.

Link to the web-site (in Russian), link to the slides (in Russian).

2012 Research and Pratice 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).

Conference Talks: Education, Technology, Popular Science

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).

- 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.
- 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 Webportal for Information and Education purposes on Computing Department", Taganrog, Russia.

Link to the web-site, or link to the expanded version in Russian.

#### Seminar Talks

- 2016 **Functional Visitors**, *Programming Languages and Compilers seminar*. Link to the slides (in Russian): 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 (in Russian).
- 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, Rostovna-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)

Publications

- 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] With G. Lukyanov.
- Buliding 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. Associated Types and Constraint Propagation for Generic Programming in Scala // "Programming and Computer Software" (english trans. of "Programmirovanie"), 2015, No 4, pp. 224–230. DOI: 10.1134/S0361768815040064 [PDF].
- 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] (in Russian), link to the early draft in English.
- Pelenitsyn A. On exploiting one metaprogramming technique. Journal of the Ivanovo Mathematical Society, 2011, No. 1(8), pp.79–84. [PDF] (in Russian).
- 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] (in Russian).
- 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 Russian).

#### Papers In Conference Transactions

- 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).

#### **Book Translations**

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.

o 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.

## Computer skills

Programming C, C++(14), Haskell, Java, Scala, Julia, Pascal, C#

languages

Markup, LTFX, HTML, CSS, JavaScript, PHP, bash, Regular expressions

Scripting

Environment Git, Make, Wiki/Markdown

Operating GNU/Linux family, Windows family

systems

# (Not So) Toy Programming Projects

chek-test Remove groove from checking students' submissions / Haskell

cpp-mv-poly C++-implementation of multivariate polynomials and the BMS-algrithm massively using

C++ templates

mmcs- Generation of entrance diagrams (in PNG) in MMCS/SFedU from oficial data (XLS) /

entrance Java, 2010

lj-comments- A tool for notifying about new comments in some livejournal.com-based blog / Haskell

notifier

Project Euler Link to the participant record / Haskell (mostly), C++

Me @ GitHub

## Languages

Russian Native

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

Interests

Classical Homer, Goethe, Joyce, Kafka, Camus, Sartr, Brodsky

literature

Art cinema Bergman, Fellini, Truffaut, Tarkovsky, Wenders, Kitano, von Trier

Extra info

Gender Male

Marital status Single

Current place Prague, Czech Republic

of living

Citizenship, Russia

Homeland