
CURRICULUM VITAE



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Education

- Feb. 2012 – present Faculty of Computer Science of the Free University of Bozen-Bolzano; European Master degree in Computational Logic; defense scheduled for the first half of October 2013
Thesis: Formal verification of data-aware business processes based on Petri net ; supervisor: Prof. Marco Montali
- Sep. 2011 – present Faculty of Mathematics, Mechanics and Computer Science of the Southern Federal University, Algebra and Discrete Mathematics Department; Master degree in Applied Mathematics and Informatics
- Oct. 2011 – Feb. 2012 Faculty of Informatics of the Dresden Technical University; European Master degree in Computational Logic
- 2007 – 2011 Faculty of Mathematics, Mechanics and Computer Science of the Southern Federal University, Algebra and Discrete Mathematics Department; Bachelor degree in Applied Mathematics and Informatics with the GPA 4.77/5.0
Thesis: Modeling and verification of SSL protocol by means of Colored Petri nets; supervisor: Prof. Alexey Maevskiy
- 1997 – 2007 Rostov State University Lyceum #1; finished with honor certificate

Teaching experience

- Jan. 2010 – May 2011 A teacher assistant for the extracurricular studies in linear algebra and mathematical analysis [*Bachelor in Applied Mathematics and Informatics, Southern Federal University*]
- Sep. 2009 – Dec. 2010 Programming Team Leader in the field of Pascal, C++ [*Bachelor in Applied Mathematics and Informatics, Southern Federal University*]

Scholarships

- Oct. 2011 – Sep. 2013 Awarded with the Erasmus Mundus scholarship for full-time study in the *European Master's Program in Computational Logic* during a period of 24 month

Scientific activity

❖ Scientific interests

- Computer science Petri nets and their extensions, analysis of data-centric dynamic systems (Petri nets approach) modal logics, temporal logics, model checking, CPN Tools (modeling, verification with CPN-ML), business process management
- Applied mathematics Machine learning, image processing

❖ Research projects

- Dec. 2012 – June 2013 *“A Petri net survey: from the basic classes to the data aware extensions”* [KRDB research center, Free University of Bozen-Bolzano, Coordinator Prof. Marco Montali]
Summary: studied a wide range of Petri net classes (including data-aware Petri nets), their possibilities in modeling and analysis of systems, decidability questions of the main Petri net problems

❖ Dissemination Activity

- Sep. 2012 Invited presentations at the Workshop of Modern Tendencies in Computer Science, Faculty of Mathematics, Mechanics and Computer Science of the Southern Federal University, Algebra and Discrete Mathematics Department. Topics: *“Machine learning. What to learn?”*, *“Machine learning. Where to learn?”*, *“Machine learning. How to learn?”*
- Dec. 2010 – Mar. 2011 Extracurricular group seminars, Faculty of Mathematics, Mechanics and Computer Science of the Southern Federal University, Algebra and Discrete Mathematics Department. Topics: *“Petri nets and their applications”*, *“Analysis methods for Petri nets”*, *“CPN Tools: design, analysis and verification”*

Statement of interest

My decision to apply for a position in ReQuoTo project is driven by my aspirations to pursue a research career in the field of Computer Science. Being a sphere of big opportunities, this field has always interested me because of its formal mathematical nature and its wide-ranging applicability.

For the first time my attention was drawn to model checking in 2010, when I started my bachelor research (under the supervision of prof. Alexey Maevskiy) concerning modeling efficiency and information security protocol analysis using colored Petri nets. Using CPN Tools we built a tractable SSL model and provided rigorous analysis of the protocol properties using colored Petri nets properties and a CTL-like temporal logic called ASK-CTL. Also, during my bachelor studies I gained an experience in such programming languages as C++, C#, Java, ML, OCaml, Pascal, LISP, Prolog.

Over the past two years of my participation in EMCL program, I cultivated a keen interest in the fields of modal logics, formal methods and business process management. Attending different lectures, I have strengthened my computational logic background and gained knowledge in model checkers such as NuSMV, Sat4j, MiniSat. My recent research project, coordinated by prof. Marco Montali, was an extensive survey of the different Petri net classes, with an accent on the data-aware extensions of the basic models. We also provided verification aspects, introducing the main formal properties studied for Petri nets, and the corresponding complexity and decidability results for the considered classes. I firmly

believe that this survey is a sufficient demonstration of my ability to conduct novel and independent research.

In my master thesis, which is also supervised by prof. Marco Montali, we discovered a new level of interaction between different classes of Petri nets and data-centric dynamic systems. Building different Petri models, we obtained valuable translation mechanisms, which are not only preserving logical properties of Petri nets and data-centric dynamic systems, but also studied beneficial connections between these two formalisms in terms of different behavioral properties and decidability results.

I have always attempted to understand the given problem and tackle it from different angles. My desire to realize my full potential and to make an original contribution to the field of Computer Science drives me to pursue a research career. Considering many interesting projects going on at KRDB research center in the field of modeling and verification of data-aware business processes, KRDB research center is an ideal choice for an exciting research career. At the same time, I am confident of contributing originally to the ReQuoTo project. As the perspective directions of my research I am considering continuation of the work initiated with prof. Montali which can either take a direction towards creation of a new Petri nets-based verification tool for the data-centric dynamic systems, or concentrate on the data-aware extensions of Petri nets and their connections with the data-centric dynamic systems. By working under the supervision of prof. Montali and prof. Artale, I am sure, I will be able to exploit my potential to the fullest and make a valuable contribution to the Faculty of Informatics and to the university overall.

Language knowledge

- Russian [mother tongue]
- English [C1 level]
- German [A1 level]
- Italian [A1 level]