

# Alena Rodionova

Institute of Computer Engineering  
Vienna University of Technology  
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## EDUCATION

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- Ph.D. in Computer Science** February 2015 – present  
Vienna University of Technology, *Vienna, Austria*  
*Dissertation:* “A Specification Language for Emergent Properties”  
*Advisor:* Prof. Radu Grosu  
*Co-Advisor:* Asst. Prof. Ezio Bartocci
- M.S. in Mathematics (with honors)** September 2012 – June 2014  
Siberian Federal University, *Russia*  
*Thesis:* “Stability of Two-Layer Fluid Flows”  
*Advisor:* Asst. Prof. Bekezhanova V. B.
- B.S. in Mathematics (with honors)** September 2008 – June 2012  
Siberian Federal University, *Russia*  
*Thesis:* “Solving Constrained Optimization Problems by using Genetic Algorithm”  
*Advisor:* Asst. Prof. Panfilov I. A.

## RESEARCH INTERESTS

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Cyber-Physical Systems, Formal Analysis and Verification, Computational Models in Systems Biology, Logic and Automata Theory

## PROFESSIONAL EXPERIENCE

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- Project Assistant** February 2015 – present  
Vienna University of Technology, *Vienna, Austria*  
Institute of Computer Engineering  
Cyber-Physical Systems Group
- Project Assistant** September 2013 – February 2015  
Russian Academy of Sciences, *Russia*  
Institute of Computational Modeling  
*Project:* Convection Motions with Interfaces and Their Stability
- Project Assistant** September 2013 – February 2015  
Altai State University, *Russia*  
Department of Mathematics and Information Technologies  
*Project:* Transfer Processes in the Two-Layer Convective Flows with Evaporation
- Project Assistant** July 2013 – February 2015  
Russian Academy of Sciences, *Russia*  
Institute of Computational Modeling  
*Project:* Nonlinear Heat and Mass Transfer Regimes and Their Stability in Binary Mixtures

## TEACHING EXPERIENCE

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**Teacher of Mathematics** September 2012 – February 2015  
SibFU School of Physics and Mathematics  
Siberian Federal University, *Russia*

**Teacher of Mathematics** September 2012 – July 2014  
Krasnoyarsk Educational Institution Lyceum 6, *Russia*

**Student Advisor** April 2013, 2014  
All-Russian Mathematical Olympiad Training  
Siberian Federal University, *Russia*

**Teacher of Mathematics** September 2011 – October 2013  
Correspondence School of Natural Science, Department of Physics and Mathematics  
Siberian Federal University, *Russia*

**Teaching Assistant** August 2009, 2010, 2011  
Krasnoyarsk Summer School  
Siberian Federal University, *Russia*

## RESEARCH AWARDS AND HONORS

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**Best Student Paper Award** April 2016  
19<sup>th</sup> ACM International Conference on Hybrid Systems: Computation and Control (HSCC 2016)  
CPS Week 2016, *Austria*

**Best Paper Presentation Award** April 2014  
10th All-Russian Scientific Students Conference “Youth and Science”, *Russia*

**Vladimir Potanin Foundation Scholarship Contest** February 2011, 2012  
Awarded to top Bachelor and Master students nation-wide, *Russia*

## PUBLICATIONS (JOURNALS)

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1. **A. Rodionova**, E. Rezanova  
“Stability of Two-Layer Fluid Flow”  
*Journal of Applied Mechanics and Technical Physics*, ISSN: 0021-8944, Vol. 57, No. 4, pp. 588–595, 2016.
2. V. Bekezhanova, **A. Rodionova**  
“Longwave Stability of Two-Layer Fluid Flow in the Inclined Plane”  
*Fluid Dynamics*, ISSN 0015-4628, Vol. 50, No. 6, pp. 723–736, 2015.

## PUBLICATIONS (CONFERENCES)

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1. **A. Rodionova**, E. Bartocci, D. Nickovic and R. Grosu  
“Temporal Logic as Filtering”  
*19th ACM International Conference on Hybrid Systems: Computation and Control, HSCC 2016*, Vienna, Austria, April 12-14, 2016, Proceedings. **Best Student Paper Award.**
2. **A. Rodionova**, V. Bekezhanova,  
“Stability of Two-Layer Fluid Flow with Long-Wave Perturbations”  
*15th All-Russian Young Scientists Conference on Mathematical Modelling and Information Technologies*, Russia, October 2014, Proceedings.

3. **A. Rodionova**, V. Bekezhanova,  
 “Stability of Two-Layer Fluid Flow with Evaporation Effect and Long-Wave Perturbations”  
*10th All-Russian Scientific Students Conference “Youth and Science”*, Russia, April 2014, Proceedings.  
Best Paper Presentation Award.
4. V. Bekezhanova, **A. Rodionova**  
 “Microscale Static Two-Layer Fluid Flow in the Inclined Plane”  
*9th All-Russian Scientific Students Conference “Youth and Science”*, Russia, April 2013, Proceedings.
5. I. Panfilov, **A. Rodionova**  
 “Static and Dynamic Penalty Functions for Constrained Optimization in Genetic Algorithms”  
*8th All-Russian Scientific Students Conference “Youth and Science”*, Russia, April 2012, Proceedings.
6. S. Senashov, **A. Rodionova**, I. Shefer  
 “New Contact Transformations”  
*14th International Scientific Conference “Reshetnev’s Readings”*, Russia, November 2010, Proceedings.

## INVITED TALKS

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| <b>VT/SVT Discrimination Algorithm</b>   | April 2016     |
| Stony Brook University, CyberCardia Meeting, Stony Brook, NY 11794, USA  |                |
| <b>Temporal Logic as Filtering</b>   | December 2015  |
| Estonian Academy of Science, ARVI Meeting, Tallinn, Estonia  |                |
| <b>On Temporal Logic and Signal Processing</b>   | September 2015 |
| NSF Stafford Place, CyberCardia Meeting, Arlington, VA, USA  |                |
| <b>Stability of Two-Layer Fluid Flow with Evaporation Effect</b>   | September 2014 |
| Institute of Computational Modeling, Departmental Research Seminar, Krasnoyarsk, Russia  |                |
| <b>Enumerative Combinatorics</b>   | April 2014     |
| Kyrgyz State Technical University, Seminar within the Siberian Federal University undergraduate admission process, Bishkek, Kyrgyzstan |                |

## PROFESSIONAL SERVICE

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### Conference Reviewer

- International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS), 2016
- International Conference on Runtime Verification (RV), 2016
- International Symposium on Automated Technology for Verification and Analysis (ATVA), 2016
- International Workshop on Hybrid Systems Biology, (HSB), 2016
- International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS), 2015
- International Conference on Computational Methods in Systems Biology (CMSB), 2015

### Journal Reviewer

- Formal Methods in System Design, 2016

## LANGUAGES SKILLS

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**English:** fluent  
**Russian:** native  
**German:** basic