

# František Blahoudek



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## *Curriculum Vitae*

PERSONAL DATA AND CONTACT INFORMATION	<i>Date of Birth:</i> August 30, 1986 <i>Phone:</i> +420 602 610 417 <i>E-mail:</i> frantisek.blahoudek@gmail.com <i>web page:</i> <a href="https://fi.muni.cz/~xblahoud">https://fi.muni.cz/~xblahoud</a>	Botanická 68a, room C415 602 00 Brno Czech Republic
ACADEMIC POSITIONS	<b>Faculty of Informatics, Masaryk University, Brno, Czech Republic:</b> <b>Research and development worker</b>	Sep. 2014 – Sep. 2017
EDUCATION	<b>Faculty of Informatics, Masaryk University, Brno, Czech Republic:</b> <b>Doctoral Degree (Ph.D.)</b> in Computer Science • <i>Thesis:</i> <b>Automata for Formal Methods: Little Steps Towards Perfection</b> • <i>Advisors:</i> Jan Strejček (since 2013) and Mojmír Křetínský (until 2013) • <i>Reviewers:</i> Orna Kupferman and Christel Baier <b>Doctoral Degree (RNDr.)</b> in Computer Science • <i>Thesis:</i> LTL and $\omega$ -automata <b>Master Degree (Mgr.)</b> in Computer Science • <i>Master thesis:</i> Translation of an LTL fragment to deterministic Rabin and Streett automata <b>Bachelor Degree (Bc.)</b> in Applied Computer Science • <i>Bachelor thesis:</i> Tools for Automated Heap Analysis (in Czech)	2012 – June 2018 2015 2012 2009
RESEARCH INTERESTS	<b>Formal Verification:</b> <ul style="list-style-type: none"><li>• translations of LTL into automata</li><li>• <math>\omega</math>-automata, games</li><li>• model checking, probabilistic model checking</li><li>• program analysis (static analysis, shape analysis)</li></ul>	
PROJECTS AND TOOLS	<b>LTL and <math>\omega</math>-Automata</b> <b>LTL3DRA:</b> Translation of LTL\GUX into deterministic automata <b>HOAF:</b> Format for exchanging $\omega$ -automata <b>LTL3TELA:</b> Translation of LTL to transition-based Emerson-Lei automata <b>Seminators:</b> Semi-determinization of generalized Büchi automata	
INVITED TALKS	<b>IST Austria</b> <i>Title:</i> Advances in $\omega$ -Automata for Formal Methods <b>TU Munich</b> <i>Title:</i> Complementation of Semi-Deterministic Automata <b>UL Brussels</b> <i>Title:</i> Advances in $\omega$ -Automata for Formal Methods <b>LaBRI Bordeaux</b> <i>Title:</i> Semi-Deterministic Büchi Automata: How to Obtain and Complement Them	June 2017 May 2018 June 2018 June 2018

## PUBLICATIONS

**Conference Proceedings:**

František Blahoudek, Alexandre Duret-Lutz, Mikuláš Klokočka, Mojmír Křetínský, and Jan Strejček. “**Seminator: A Tool for Semi-Determinization of Omega-Automata**”. In: *Proceedings of the 21st International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR-21)*. EPIc Series in Computing (vol. 46), 2017.

František Blahoudek, Matthias Heizmann, Sven Schewe, Jan Strejček, and Ming-Hsien Tsai. “**Complementing Semi-deterministic Büchi Automata**”. In: *Proceedings of the 22nd International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS’16)*. Lecture Notes in Computer Science (vol. 9636), 2016.

Tomáš Babiak, František Blahoudek, Alexandre Duret-Lutz, Joachim Klein, Jan Křetínský, David Müller, David Parker, and Jan Strejček. “**The Hanoi Omega-Automata Format**”. In: *Proceedings of the 27th International Conference on Computer Aided Verification (CAV’15)*, part I. Lecture Notes in Computer Science (vol. 9206), 2015.

František Blahoudek, Alexandre Duret-Lutz, Vojtěch Rujbr, and Jan Strejček. “**On Refinement of Büchi Automata for Explicit Model Checking**”. In: *Proceedings of 22nd International SPIN Symposium on Model Checking of Software (SPIN’15)*. Lecture Notes in Computer Science (vol. 9232), 2015.

František Blahoudek, Alexandre Duret-Lutz, Mojmír Křetínský, and Jan Strejček. “**Is there a Best Büchi Automaton for Explicit Model Checking?**” In: *Proceedings of 21st International SPIN Symposium on Model Checking of Software (SPIN’14)*. 2014.

Tomáš Babiak, František Blahoudek, Mojmír Křetínský, and Jan Strejček. “**Effective Translation of LTL to Deterministic Rabin Automata: Beyond the (F, G)-Fragment**”. In: *Proceedings of the 11th International Symposium on Automated Technology for Verification and Analysis (ATVA’13)*. Lecture Notes in Computer Science (vol. 8172), 2013.

František Blahoudek, Mojmír Křetínský, and Jan Strejček. “**Comparison of LTL to Deterministic Rabin Automata Translators**”. In: *Proceedings of the 19th International Conference on Logic for Programming, Artificial Intelligence, and Reasoning (LPAR-19)*. Lecture Notes in Computer Science (vol. 8312), 2013.

RESEARCH STAYS **Alexandre Durt-Lutz, LRDE laboratory, Epita, Kremlin-Bicêtre, France**

- nine days June 2015
- nine days May 2014

SUPERVISED STUDENTS **Master students**

**Juraj Major**

- Translation of LTL into Automata with Generic Acceptance Condition.
- Dean’s prize

TEACHING EXPERIENCE **Faculty of Informatics, Masaryk University, Brno, Czech Republic**

- TeachingLab 2016 – 2017
- Algorithms and Data Structures 2015 – 2017
- Automata, Grammars, and Complexity 2013 – 2017
- Selected Chapters of Automata Theory 2013 – 2014
  - for students with hearing disabilities 2014
- Formal Languages and Automata 2013 – 2014
- Automata and Grammars 2008 – 2012