



# Andreea Buga

## Curriculum Vitae

*"Science is what we understand well enough to explain to a computer. Art is everything else we do." Donald Knuth*

### Personal Information

Name: Andreea Buga, MSc  
Date of birth: December 17th, 1989  
Birthplace: Drăgășani, Romania  
Nationality: Romanian  
Email: buga.andreea@gmail.com, abuga@cdcc.faw.jku.at  
Affiliation: Johannes Kepler University of Linz  
Christian Doppler Laboratory for Client Centric Cloud Computing

### Education

- 2014–2017 **PhD**, *Johannes Kepler University, Linz.*  
Technical Studies in the area of Formal Methods for Cloud Computing Services  
Thesis title: Formal Modeling of a Monitoring Solution for Large-Scale Distributed Systems  
Thesis advisers: Prof. Dr. Klaus-Dieter Schewe, A.o. Univ. Prof. Dr. Dipl.-Ing. Eva Kühn
- 2013–2014 **M.Sc.**, *Johannes Kepler University, Linz.*  
International Studies in Informatics: Engineering and Management  
Thesis title: A timestamp algorithm approach for offline data synchronization in mobile computing  
Thesis advisers: Prof. Dr. Klaus-Dieter Schewe, Dipl.-Ing. Dr. Wolfgang Beer
- 2009–2013 **B.Sc.**, *Politehnica University, Bucharest.*  
Bachelor of Science in Information Technology, Specialization - Software Engineering  
Thesis title: Supporting Patient Empowerment Through ICT  
Thesis advisers: Assistant Professor Dr. Dipl.-Ing. Andrei Vasilățeanu

### Certifications

- 2017 Session Chair - Session Modelling and Analytics, CLOSER conference  
2016 Recognized Reviewer Status (Health Policy and Technology Journal), Elsevier  
2011 Java 2 - Networking & Databases, Telecom Academy, Bucharest  
2011 Java 1 - Introduction to Fundamentals, Telecom Academy, Bucharest

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## Professional Experience

- September 2014 - September 2017 **Research Fellow**, *Johannes Kepler University, Linz*.  
I am currently working as a researcher in the main project of our laboratory focused on the evolution of cloud-enabled large-scale distributed systems. I am involved in designing a formal specification for the monitoring component for a cloud-enabled large-scale distributed system and elaborating the corresponding documentation.  
Engaged in investigating the state-of-the-art in the area, surveying the strength and weakness of the current solutions. Responsible for specifying a model for the monitoring framework in terms of Abstract State Machines by using the AsmetaL language. Carrying out scenario-based validation and model-checking verification techniques.
- October 2014 - January 2015 **Tutor - Software Engineering Seminar**, *Johannes Kepler University, Linz*.  
Assessing assignments of students (risk analysis, requirements specification, system design and prototype) following the guidelines given by the professor.
- March 2014 - June 2014 **Tutor - Principles of Interaction Seminar**, *Johannes Kepler University, Linz*.  
A direct collaboration with the students for the successful delivery of an Android application project that respects the guidelines given by Human Computer Interaction and Pervasive Computing disciplines.
- June 2012 - August 2012 **Web Developer Intern**, *Customsoft, Bucharest*.  
The work was part of an internship an involved extending the functionality of an ERP system for a real-estate company and improving the database schema of the system. The main tasks dealt with defining backend functions, parsing data and managing the content displayed to different user types.
- June 2011 - October 2011 **Web Developer**, *Erka, Bucharest*.  
Development of an website covering both backend and frontend development. Responsible for the emailing campaign for the customers, which implied the creation of its HTML version.

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## Languages

Romanian	Mother tongue	
English	Full professional proficiency	<i>Cambridge CAE certificate</i>
German	Medium proficiency	<i>B2 level</i>
French	Elementary proficiency	<i>A2 level</i>

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## Software Development

Programming	Java, PHP, Android
Development Practices	SVN, OOP, Design Principles
Databases	MySQL, Java ODBC
Other	XML, JSON, Weka, LateX, AsmetaL

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## Main Areas of Research

Formal modeling	Cloud computing
Abstract State Machines	Monitoring processes
Large-Scale Distributed Systems	Ontologies

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## Scholarships

- 2013-2014 Study fellowship from the International Studies of Informatics, Hagenberg
- 2009-2013 Merit scholarship from the Politehnica University, Bucharest

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## Research Related Activities

- 2017 Subreviewer of the 40<sup>th</sup> German Conference on Artificial Intelligence
- 2017 Chaired the session on Session Modelling and Analytics at CLOSER conference, Porto
- 2016 Reviewer of the Health Policy and Technology Journal, Elsevier
- 2016 Reviewer of the "Cloud Computing" Special Issue of the TLDKS (Transactions on Large-Scale Data and Knowledge Centered Systems) Journal, Springer
- 2016 Locally organized and attended the 5<sup>th</sup> ABZ (Abstract State Machines, Alloy, B, TLA, VDM, and Z) International Conference, Linz
- 2016 Locally organized and attended the 9<sup>th</sup> FolKS (Foundations of Information and Knowledge Systems) International Symposium, Linz
- 2015 Reviewer of the 6<sup>th</sup> International Workshop on Conceptual Modelling of Services
- 2015 Attended the 27<sup>th</sup> ESSLLI (European Summer School in Logic, Language and Information Summer School) at the Pompeu Fabra University, Barcelona.

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## Publications

1. Andreea Buga and Sorana Tania Nemeş. *A Formal Approach for Failure Detection in Large-Scale Distributed Systems using Abstract State Machines*. In Database and Expert Systems Applications (DEXA), 2017 28<sup>th</sup> International Conference on, August 2017 (To appear)
2. Andreea Buga and Sorana Tania Nemes. *Adopting Formal Approaches for Monitoring Sensors of Intercloud Systems*. In Intercloud and IoT (ICI), 2017 4<sup>th</sup> International Symposium on, August 2017
3. Andreea Buga and Sorana Tania Nemeş. *Towards an ASM Specification for Monitoring and Adaptation Services of Large-Scale Distributed Systems*. In Modeling and Verifying Distributed Applications (MVDA), 2017 6<sup>th</sup> IEEE Workshop on, July 2017 (To appear)
4. Sorana Tania Nemeş and Andreea Buga. *Towards Modeling Adaptation Services for Large-Scale Distributed Systems with Abstract State Machines*. In Business Modeling and Software Design (IS-BMSD), 2017 7<sup>th</sup> International Symposium on, July 2017 (To appear)
5. Sorana Tania Nemeş and Andreea Buga. *Towards a Case-Based Reasoning Approach to Dynamic Adaptation for Large-Scale Distributed Systems*. In Case-Based Reasoning (ICCBR), 2017 25<sup>th</sup> International Conference on, June 2017 (To appear)
6. Andreea Buga and Sorana Tania Nemeş. *Towards Modeling Monitoring Services for Large-Scale Distributed Systems with Abstract State Machines*. In Evaluation and Modelling Methods for Systems Analysis and Development (EMMSAD), 2017 22<sup>nd</sup> International Conference on, June 2017 (To appear)

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7. Andreea Buga, Sorana Tania Nemeş, Klaus-Dieter Schewe and Pornpan Songprasop. *A Conceptual Model for Systems Engineering and Its Formal Foundation*. In Information Modelling and Knowledge Bases (EJC), 2017 27<sup>th</sup> International Conference on, June 2017 (To appear)
8. Andreea Buga and Sorana Tania Nemeş. *Towards Modeling Monitoring of Smart Traffic Services in a Large-Scale Distributed System*. In Cloud Computing and Services Science (CLOSER), 2017 6<sup>th</sup> International Conference on, volume 1, pages 483-490 April 2017
9. Andrei Vasilăţeanu, Ioan Cosmin Radu, and Andreea Buga. *Environment crowd-sensing for asthma management*. In E-Health and Bioengineering Conference (EHB), 2015, pages 1-4, Nov 2015.
10. Andrei Vasilăţeanu and Andreea Buga. *Asthmate - supporting patient empowerment through location-based smartphone applications*. In Control Systems and Computer Science (CSCS), 2015 20<sup>th</sup> International Conference on, pages 411-417, May 2015
11. Andreea Buga. *A scalable monitoring solution for large-scale distributed systems*. In Roberto Moreno-Díaz, Franz Pichler, and Alexis Quesada-Arencibia, editors, Computer Aided Systems Theory - EUROCAST 2015, volume 9520 of Lecture Notes in Computer Science, pages 219-227. Springer International Publishing, 2015
12. Andreea Buga. *A scalable monitoring solution for large-scale distributed systems*. In A. Quesada-Arencibia et al., editors, Extended Abstracts of the Fifteenth International Conference on Computer Aided Systems Theory (EUROCAST 2015), pages 67 - 68. Gran Canaria, Spain, 2015
13. Andreea Buga. *A timestamp algorithm approach for offline data synchronization in mobile computing*. Master's thesis, Johannes Kepler Universität Linz, July 2014.
14. C. Buiu, A Buga, and AM. Coman. *Teaching robotics and virtual reality in a synergistic approach*. In e-Learning in Industrial Electronics (ICELIE), 2013 7<sup>th</sup> IEEE International Conference on, pages 71-75, Nov 2013
15. Andreea Buga. *Supporting Patient Empowerment Through ICT*. Bachelor's Thesis, Universitatea Politehnica, Bucuresti, Romania, July 2013.

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