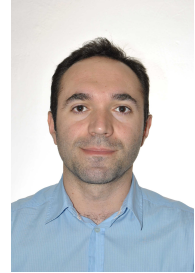


# Bunjamin Memishi, Curriculum Vitae

## Personal information

Full name	Bunjamin Memishi
Address	Data Management Technologies Group Institute of Data Science German Aerospace Center Mälzerstraße 3 Jena 07745 Germany
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Email	bunjamin.memishi [AT] dlr.de, bunjaminm [AT] gmail.com
Nationality	North Macedonia
Date of Birth	October 25, 1983



## Summary

I am a research scientist in the data management field at German Aerospace Center (DLR). Currently, I am working on efficient storage and fast access challenges of large amount of scientific data.

My broad research interests concern dependability, and security in distributed systems and storage systems, with particular emphasis on data-intensive computing systems. During my past and current research, I have been extensively studying distributed systems, looking for methodologies that introduce the minimal cost and guarantee an appropriate level of reliability. I feel fortunate to have gathered sufficient background, by means of working on many relevant proposals, among others:

- develop monitoring tools for dynamic distributed systems such as institutional grids and production clouds
- failure prediction protocols for complex software systems such as air traffic control systems
- failure detector abstractions for data-intensive computing systems such as MapReduce-based frameworks
- novel algorithms for single points of failure of the later frameworks
- novel resource allocation algorithms for different resource abstractions such as digital containers
- testing frameworks for cyber-physical systems
- interoperable heterogeneous IoT platforms

People that work with me on daily basis, they very soon come to realize that I am soft, but not weak; I am strong, but make no aggression whatsoever; I am hard worker, but that always finds time for family and friends. I am trustworthy, and make no compromise until the justice has prevailed.

## Education

2012–2016	Doctor of Philosophy in Computer Science Thesis: Optimizing the reliability and resource efficiency of MapReduce-based systems Departamento de Arquitectura y Tecnología de Sistemas Informáticos Universidad Politécnica de Madrid, Spain
2008–2010	Master of Science in Computer Engineering Thesis: Using Event Processing for Failure Prediction in Complex Software Systems Dipartimento di Informatica e Sistemistica “Antonio Ruberti” Università degli studi di Roma “La Sapienza”, Italy
2003–2007	Bachelor of Science in Computer Science Thesis: Normalization through functional dependencies Department of Computer Sciences South East European University, North Macedonia

## Research experience

2018-present	Research Scientist Research on data management issues of large-scale scientific data Institute of Data Science German Aerospace Center (DLR)
2017-2018	Research Scientist Project: Testing Cyber-Physical Systems under Uncertainty (U-Test) Project: Interoperability of Heterogeneous IoT Platforms (Inter-IoT) Research on uncertainty issues of IoT cloud systems TU Wien, Austria
2010–2016	Early Stage Researcher Project: Storage-based Convergence between HPC and Cloud to handle Big Data (BigStorage) Project: Marie Curie Initial Training Network (MCITN) “SCALing by means of Ubiquitous Storage (SCALUS)” Project: Global Monitoring systEm (GMonE) Develop fault-tolerant strategies based on the modeling of large-scale storage environments Universidad Politécnica de Madrid, Spain
2012 2011	Research intern Project: Marie Curie Initial Training Network (MCITN) “SCALing by means of Ubiquitous Storage (SCALUS)” INRIA Rennes - Bretagne Atlantique, France
2010	Junior Researcher Project: Failure Forecasting in Complex Distributed Systems(CASPER) Develop a system prototype, based on state-of-the-art Complex Event Processing (CEP) engines that can support on-line and off-line failures detection and prediction on the most advanced complex software systems Università degli studi di Roma “La Sapienza”, Italy

2007–2009	<p>Junior Researcher</p> <p>Research, design and implement fault-tolerant web service integration, based on the Microsoft Platform</p> <p>South East European University, North Macedonia</p>
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## Teaching experience

Position	Teaching assistant
Institution	South East European University
Academic year	Spring 2008
Degree course	Distributed Computing
Number of hours	12 hours x 14 weeks

Position	Teaching assistant
Institution	South East European University
Academic year	Winter 2007-2008
Degree course	Network Management
Number of hours	6 hours x 14 weeks

Position	Teaching assistant
Institution	South East European University
Academic year	Winter 2007-2008
Degree course	Calculus and Linear Algebra
Number of hours	3 hours x 14 weeks

## Professional experience

2015	<p>Part-time Intern</p> <p>Develop and transform classical relational database services into object-relational mapping services, entirely based on open source frameworks</p> <p>LaserLuz Corp., Spain</p>
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2000–2007	<p>Summer Intern</p> <p>Database Administration and Programming, based on the Microsoft Platform</p> <p>Lawyers Association, North Macedonia</p>
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## Research service

2018–present	<p>Journal reviewer</p> <p>PLOS ONE</p>
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2017–present	<p>Journal reviewer</p> <p>Concurrency and Computation: Practice and Experience</p>
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2017–present	<p>Journal reviewer</p> <p>Computer Standards &amp; Interfaces, The International Journal on the Development and Application of Standards for Computers, Software Quality, Data Communications, Interfaces and Measurement</p>
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2016–present	Journal reviewer Future Generation Computer Systems (FGCS), The International Journal of eScience
2013–2014	Conference reviewer Euro-Par 2014, International Conference on Parallel and Distributed Processing
2014	Local committee Cluster 2014, IEEE International Conference on Cluster Computing
2012	Local committee HPCS 2012, International Conference on High Performance Computing & Simulation

### Publications (peer-reviewed)

- Benjamin Memishi, Raja Appuswamy, Marcus Paradies. *Cold Storage Data Archives: More Than Just a Bunch of Tapes*. Proceedings paper in The 15th International Workshop on Data Management on New Hardware (DaMoN) 2019, July 2019.
- Benjamin Memishi, María S. Pérez, and Gabriel Antoniu. *Failure detector abstractions for MapReduce-based systems*. Article in Information Sciences, 2017.
- Benjamin Memishi, Shadi Ibrahim, María S. Pérez, and Gabriel Antoniu. *Fault Tolerance in MapReduce: A Survey*. Book chapter in Resource Management for Big Data Platforms: Algorithms, Modelling, and High-Performance Computing Techniques. Computer Communications and Networks Springer Book series. Springer International Publishing, October 2016.
- Benjamin Memishi, María S. Pérez, and Gabriel Antoniu. *Feedback-based resource allocation in MapReduce-based systems*. Article in Scientific Programming, vol. 2016, Article ID 7241928, 13 pages, 2016.
- Benjamin Memishi, Shadi Ibrahim, María S. Pérez, and Gabriel Antoniu. *On the Dynamic Shifting of the MapReduce Timeout*. Book chapter in Managing and Processing Big Data in Cloud Computing, Advances in Data Mining and Database Management (ADMDM) Book series. IGI Global, January 2016.
- Benjamin Memishi, María S. Pérez, and Gabriel Antoniu. *Diarchy: An Optimized Management Approach for MapReduce Masters*. Proceedings paper in International Conference On Computational Science (ICCS) 2015, Computational Science at the Gates of Nature. Procedia Computer Science, Volume 51, Pages 9-18, June 2015.
- Jesús Montes, Alberto Sánchez, Benjamin Memishi, María S. Pérez, and Gabriel Antoniu. *GMonE: A complete approach to cloud monitoring*. Article in Future Generation Computer Systems (FGCS), Volume 29, Issue 8, Pages 2026-2040, October 2013.
- Benjamin Memishi, María S. Pérez, and Gabriel Antoniu. *Enhanced failure detection mechanism in MapReduce*. Doctoral Workshop paper in International Conference on High Performance Computing and Simulation (HPCS), 2012, Pages 690-692, July 2012.
- Benjamin Memishi, María S. Pérez, and Gabriel Antoniu. *High performance, Secure and Fault tolerant large scale storage system*. Doctoral Workshop paper in EuroSys 2011 Conference. April 2011.
- Bujar Raufi, Zamir Dika, Florije Ismaili, Xhemal Zenuni, and Benjamin Memishi. *Virtualizing a campus: a SEEU case study*. Proceedings paper in International Conference on Digital Interactive Media in Entertainment and Arts (DIMEA), Pages 215-218, September 2008.

## Recognition

2013–2015	Amazon Research Grant Education Research Grant, Amazon.com, Inc.
2012	Conference Attendance Grant HPCS 2012 Conference
2011–2013	Amazon Research Grant Education Research Grant, Amazon.com, Inc.
2011	EuroSys Travel Grant EuroSys 2011 Conference
2010–2013	Marie Curie Fellowship Marie Curie Initial Training Network (MCITN) “SCALing by means of Ubiquitous Storage” (SCALUS), European Commission
2008–2010	Basileus Programme Scholarship European Commission
2007	Outstanding Student Award Teaching Council, North Macedonia
2007	Student of the Generation South East European University, North Macedonia
2006–2007	Student of the Year IYF, North Macedonia
2006–2007	Renova Foundation Scholarship Renova Corp., North Macedonia
2005–2007	Bamirësia Scholarship NUN Publishing House, North Macedonia
2004–2006	Ministry of Education and Science Scholarship Ministry of Education and Science, North Macedonia
2004–2006	DAAD Scholarship DAAD - Deutscher Akademischer Austausch Dienst (German Academic Exchange Service), Germany

## Training

2013	Early Stage Researcher Summer School, SCALUS FORTH, Heraklion, Greece
2012	Early Stage Researcher Soft Skill Courses, SCALUS Institut Henri Poincaré, Paris, France
2012	11th HLRS/hww Workshop on Scalable Global Parallel File Systems “Total Cost of Dataship” High Performance Computing Center (HLRS), Stuttgart, Germany

2010–2012	Doctoral Training Period Universidad Politécnica de Madrid, Spain
2011	Early Stage Researcher Winter School, SCALUS Paderborn Center for Parallel Computing, Paderborn, Germany
2011	Grid’5000 Spring School 2011 Université de Reims Champagne-Ardenne, Reims, France
2011	Early Stage Researcher Initial Training School, SCALUS Universitat Politècnica de Catalunya, Barcelona, Spain
2011	OpenNebula training session, RESERVOIR Digitaleurope, Brussels, Belgium

## Skills

Concepts	Structural programming, System programming, Object-oriented programming, Distributed systems, Distributed computing, Parallel computing, Cluster computing, Grid computing, Cloud computing, High-performance computing, Data-intensive computing, Autonomic computing, Fault-tolerant computing, Big data, Virtualization, Simulations, Data analysis, Pattern recognition, Software engineering
Hands-on	Amazon Web Services, SQL, NoSQL, Oracle, MS SQL Server, MySQL, PostgreSQL, pgAdmin, SQL Power Architect, Apache Tomcat, MapReduce, Apache Hadoop, Netkit, OpenNebula, MS Windows, MacOS X, Linux, C, C++, C#, Java, J2EE, JBoss Developer Studio, Eclipse, NetBeans, MS Visual Studio, Rational Rose, Hibernate, JavaServer Faces, Primefaces, PHP, CSS, HTML, XHTML, XML, UML, Matlab, MS Office, MS Visio, OpenOffice, LibreOffice, L <sup>A</sup> T <sub>E</sub> X, Bash, Vim, Screen, Tmux, Subversion, Git

## Languages

Language	Reading skills	Writing skills	Verbal skills
Albanian	Mother tongue		
Slav-Macedonian	excellent	excellent	excellent
Serbo-Croatian	excellent	excellent	excellent
English	excellent	excellent	excellent
Spanish	excellent	excellent	excellent
Italian	excellent	excellent	good
French	excellent	excellent	good
German	basic	basic	basic

Jena, July 22, 2019