

PERSONAL	First name / Surname Nationality	Barbora BÜHNOVÁ, née ZIMMEROVÁ Czech Republic
CONTACT INFORMATION	Faculty of Informatics Masaryk University Botanická 68a 602 00 Brno, Czech Republic	<i>Phone:</i> +420 549 494 494 <i>E-mail:</i> buhnova@fi.muni.cz <i>WWW:</i> https://www.fi.muni.cz/~buhnova https://www.muni.cz/en/people/39394-barbora-buehnova
PROFESSIONAL INTERESTS	Software engineering, software architecture, critical infrastructures, quality attributes of software systems (trust, reliability, security, safety, forensic readiness, performance), software engineering education, women in tech, diversity. <i>Google Scholar profile:</i> https://scholar.google.com/citations?user=3J7jHK4AAAAJ	
UNIVERSITY EDUCATION AND DEGREES	<p>Doc. – Associate Professor Faculty of Informatics, Masaryk University, Brno, Czech Republic <i>Topic:</i> Quality-Driven Architecture Design of Software Systems Awarded in September 2017</p> <p>Ph.D. – University doctoral degree Faculty of Informatics, Masaryk University, Brno, Czech Republic <i>Topic:</i> Modelling and Formal Analysis of Component-Based Systems in View of Component Interaction From September 2004 to October 2008</p> <p>RNDr. – Rerum Naturalium Doctor degree Faculty of Informatics, Masaryk University, Brno, Czech Republic <i>Topic:</i> Formal Analysis of Component-Based Systems Awarded in May 2008</p> <p>Ing. – University master degree Faculty of Business and Economics, Mendel University, Brno, Czech Republic <i>Topic:</i> Application of the Automata Theory to Modelling of Socio-Economic Systems From September 2006 to January 2009</p> <p>Mgr. – University master degree Faculty of Informatics, Masaryk University, Brno, Czech Republic <i>Topic:</i> Analysis and Design of Internet Applications using Patterns From September 1999 to June 2004</p>	
UNIVERSITY ROLES AND POSITIONS	<p>Vice-Dean for Industrial Partners Faculty of Informatics, Masaryk University, Brno, Czech Republic From September 2019 to present</p> <p>Chair of the Association of Industrial Partners With 30+ companies, see https://www.fi.muni.cz/for-partners/index.html Faculty of Informatics, Masaryk University, Brno, Czech Republic From January 2018 to present</p> <p>Associate Professor Faculty of Informatics, Masaryk University, Brno, Czech Republic Department of Computer Systems and Communications</p>	

From **September 2017** to **present**

Deputy Head of the Lab of SW Architectures and Inf. Systems (LaSArIS)

Faculty of Informatics, Masaryk University, Brno, Czech Republic

From **June 2009** to **present**

Disciplinary Committee member

Faculty of Informatics, Masaryk University, Brno, Czech Republic

From **November 2018** to **present**

From **November 2006** to **November 2008**

Deputy Head of the Department of Computer Systems and Communications

Faculty of Informatics, Masaryk University, Brno, Czech Republic

From **September 2014** to **September 2019**

Academic Senate member

Faculty of Informatics, Masaryk University, Brno, Czech Republic

From **January 2018** to **September 2019**

Assistant Professor

Faculty of Informatics, Masaryk University, Brno, Czech Republic

Department of Computer Systems and Communications

From **July 2009** to **September 2019**

Member of the Parallel and Distributed Systems Laboratory (ParaDiSe)

Faculty of Informatics, Masaryk University, Brno, Czech Republic

From **September 2004** to **September 2011**

Specialist

Faculty of Informatics, Masaryk University, Brno, Czech Republic

Highly Parallel and Distributed Computing Systems

From **January 2005** to **June 2009**

External Teacher

Faculty of Informatics, Masaryk University, Brno, Czech Republic

Department of Computer Science

& Department of Computer Systems and Communications

From **February 2003** to **June 2008**

TEACHING

Ongoing Courses

PB007 Software Engineering I, CORE013 Software Development, PV167 Seminar on Design and Architecture Patterns, PV260 Software Quality, PV239 Mobile Application Development, PV226 LaSArIS Seminar, DPITS Enterprise IT Systems and Services

Past Courses and Support

PV178 Introduction to Development in C#/.NET, PV179 System Development in C#/.NET, IB102 Automata and Grammars, IB108 Algorithm Design II, PB162 Java, PB007 Systems Analysis and Design

Since **February 2003**

RESEARCH

FELLOWSHIPS AND
COLLABORATIONS

Visiting researcher (virtual mobility) – NTNU, Trondheim, Norway

Faculty of Information Technology and Electrical Engineering, prof. Letizia Jaccheri

Supported by Virtual Mobility grant, COST Action CA19122

From **July 2022** to **September 2022**

Visiting researcher – Swinburne University of Technology, Melbourne, Australia
Faculty of Information and Communication Technologies, Group of dr. Lars Grunske
From **April 2009** to **May 2009**

PostDoc researcher – Research Centre for Inf. Technology (FZI), Karlsruhe, Germany
Department of Software Engineering (SE/SEQ), Group of prof. Ralf H. Reussner
From **September 2008** to **February 2009**

Guest researcher – Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
Chair for Software Design and Quality (SDQ)
From **April 2007** to **June 2007**

Long-Term International Research Collaborations

- Fraunhofer Institute for Experimental Software Engineering (IESE), Germany,
Emilia Cioroica et al., **10+** joint publications (from **2018** to **present**)
- Karlsruhe Institute of Technology (KIT), Germany,
Lucia Happe et al., **10+** joint publications (from **2009** to **present**)
- Deggendorf Institute of Technology, Germany,
Mouzhi Ge et al., **4** joint publications (from **2021** to **present**)
- University of Tartu, Estonia,
Raimundas Matulevicius et al., **2** joint publications (from **2022** to **present**)
- University of Naples 'Federico II', Italy,
Francesco Caputo et al., **6** joint publications (from **2016** to **2021**)
- Swinburne University of Technology, Australia,
Aldeida Aleti et al., **5** joint publications (from **2009** to **2012**)

RECOGNITIONS & ELECTED ROLES

Keynote Speaker – by invitation
Over 60 delivered invited talks, including keynotes at international top-ranked conferences and high-level policy gatherings at the European level.
From **2015** to **present**

EUGAIN Network Vice-chair – Nominated and elected
EUGAIN: European Network For Gender Balance in Informatics, COST Action CA19122
From **2021** to **present**

EUGAIN Grant Coordinator – Nominated and elected
Leading Grant Evaluation Committee, overseeing distribution of grants to applicants,
COST Action CA19122
From **2021** to **present**

Steering Committee chair – Nominated and elected
ICSA: International Conference on Software Architecture (CORE rank A)
From **2018** to **2022**

Editorial Board member – Appointed by the editor in chief
EMSE: Empirical Software Engineering (Springer, IF 3.762)
From **2018** to **present**

Review Board member – Appointed by the editor in chief
TSE: IEEE Transactions on Software Engineering (IEEE, IF 9.322)
From **2018** to **present**

GARI International Advisory Board member – Appointed by the GARI President
GARI: Global Arena Research Institute
From **2019** to **present**

Steering Committee member – Nominated and elected
ICSA: International Conference on Software Architecture (CORE rank A)
From **2017** to **present**

Steering Committee member – Nominated and elected
CompArch: Federated Events on Component-Based Software Engineering and Software Architecture
From **2011** to **2016**

AWARDS

TOP Women of Czechia 2022 – Nominated and awarded
Hospodarske noviny magazine: Top women of Czechia, Public Sector category
March 2023

TOP IT Personalities 2021 – Nominated and awarded
Computerworld magazine: The top personalities in tech in the Czech Republic
December 2021

MUNI Scientist 2021 – Nominated and awarded
Masaryk University: For top results and significant achievements in the field of research
November 2021

SELECTED
COMMUNITY
ENGAGEMENT

I am passionate about inclusive tech education among general public, being a member of multiple initiatives engaging more women in tech. For information on these activities, see <https://www.fi.muni.cz/~buhnova/research/buhnova-cv-diversity.pdf>

Co-Founding and Governing Board member of Czechitas
Non-profit award-winning organisation aiming at making IT skills more accessible to youth and women
From **February 2015** to **present**

Board of Trustees member of 42 Prague
Peer-to-peer coding institution (member of 42, created in Paris) with a curriculum empowering the next leading generation of tech talent.
From **January 2022** to **present**

Women in Informatics Research and Education (WIRE) member
Informatics Europe working group
From **January 2020** to **December 2021**

TEDx Organizing Team member
TEDxYouth@Brno 2017
TEDxBrnoWomen 2016

SELECTED
RESEARCH
PROJECTS

Forensic Support for Building Trust in Smart Software Ecosystems
Funded by the Grant Agency of MU, GAMU Interdisciplinary programme
From **May 2023** to **December 2025**
Project leader

CyberSecurity, CyberCrime and Critical Information Infrastructures Center of Excellence (CZ.02.1.01/0.0/0.0/16_019/0000822)
Funded by the Ministry of Education, Youth and Sports of the CR / Operational Programme Research, Development and Education
From **April 2018** to **June 2023**
Leader of Research Program 2

CERIT Scientific Cloud (CZ.02.1.01/0.0/0.0/16_013/0001802)

Funded by the Ministry of Education, Youth and Sports of the CR / Operational Programme Research, Development and Education

From **May 2017** to **April 2021**

Scientific Leader of the project

Application of Bayesian Belief Networks in the Smart Grid Domain

Funded by the South Moravian Innovation Centre, Czech Republic

From **July 2014** to **June 2015**

Project leader

SELECTED
TEACHING
PROJECTS

Support of talented students from elementary and high-schools at the Faculty of Informatics MU (project no. 0039/7/NAD/2020, no. 0064/7/NAD/2021, no. 0038/7/NAD/2022, no. 0034/7/NAD/2023))

Funded by the Ministry of Education, Youth and Sports, Czech Republic

From **January 2020** to **December 2023**

Project leader

Advancement of practical software development education in C#/.NET via innovation of the PV179 course

Funded by FRMU, Masaryk University, Brno, Czech Republic

From **January 2018** to **December 2018**

Project leader

Advancement of the Teaching of Software Quality at FI MU

Funded by FRMU, Masaryk University, Brno, Czech Republic

From **January 2015** to **December 2015**

Project leader

SELECTED
INDUSTRIAL
PROJECTS

Study of secure data provisioning from an electro-meter to the customer in consumption location

Contractual research for ČSRES, Czech Association of the Regulated Power Supply Companies, Czech Republic

From **September 2016** to **January 2017**

Preparatory research for AMM (Advanced Metering Management)

Contractual research for ČEZ Distribuce, a.s., Czech Republic

From **July 2015** to **December 2015**

SELECTED
COOPERATION
PROJECTS

CA19122 - European Network For Gender Balance in Informatics

EU, European Cooperation in Science and Technology (COST)

From **October 2020** to **October 2024**

Vice-Chair, Management Committee

IC1404 - Multi-Paradigm Modelling for Cyber-Physical Systems

EU, European Cooperation in Science and Technology (COST)

From **October 2014** to **October 2018**

Member

ROLES IN OCS
OF SELECTED
CONFERENCES

General co-chair

– **womENCourage 2021**: 8th ACM Celebration of Women in Computing – *General co-chair*

– **MOBILESoft 2017**: IEEE/ACM International Conference on Mobile Software Engineering and Systems – *Conference co-chair*

- **FESCA 2009-2017**: 6th-14th International Workshop on Formal Engineering approaches to Software Components and Architectures – *Program committee co-chair, Workshop co-organizer*
- **WCOP 2010-2015**: 15-20th International Doctoral Symposium on Components and Architecture – *Program committee co-chair, Symposium co-organizer*

Main Track PC co-chair

- **ICSA 2018**: 15th International Conference on Software Architecture [**CORE Rank A**] – *Program committee co-chair*
- **QoSA 2012**: 8th International Conference on Quality of Software Architecture [**CORE Rank B**] – *Program committee co-chair, Conference co-organizer*

Organizing Committee / Track co-chair

- **womENcourage 2023**: 10th ACM Celebration of Women in Computing – *Poster co-chair*
- **ECSA 2022**: 16th European Conference on Software Architecture [**CORE Rank A**] – *Industry Program co-chair*
- **ICSA 2022**: 19th International Conference on Software Architecture [**CORE Rank A**] – *Workshops and Tutorials co-chair*
- **ASE 2021**: 36th IEEE/ACM International Conference on Automated Software Engineering [**CORE Rank A***] – *Doctoral Symposium co-chair*
- **ECSA 2020**: 14th European Conference on Software Architecture [**CORE Rank A**] – *Tool Demos co-chair*
- **ETAPS 2019**: European Joint Conferences on Theory and Practice of Software – *Publicity chair*
- **ICSE 2018**: 40th International Conference on Software Engineering [**CORE Rank A***] – *Proceedings co-chair*
- **ICSA 2017**: 14th International Conference on Software Architecture [**CORE Rank A**] – *Tool Demonstrations co-chair*
- **WICSA and CompArch 2016**: Joint International Conference on Software Architecture [**CORE Rank A**] – *Young Researchers Forum co-chair*
- **MOBILESoft 2016**: IEEE/ACM International Conference on Mobile Software Engineering and Systems – *Tutorials & Technical Briefings chair*
- **ESEC/FSE 2013**: 9th joint meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering [**CORE Rank A***] – *Workshop selection co-chair, Local organization assistant*

PC MEMBERSHIP AND REVIEWING

Selected journals

- **TSE**: IEEE Transactions on Software Engineering (IEEE, IF 6.112)
- **TSC**: IEEE Transactions on Services Computing (IEEE, IF 5.823)
- **IEEE Software** (IEEE, IF 3.000)
- **Communications of ACM** (ACM, IF 3.250)
- **JSS**: Journal of Systems and Software (Elsevier, IF 3.514)
- **TOSEM**: Transactions Software Engineering and Methodology (ACM, IF 2.071)
- **Computing** (Springer, IF 2.044)
- **SoSyM**: Software and Systems Modeling (Springer, IF 1.876)
- **SCP**: Science of Computer Programming (Elsevier, IF 0.775) - Guest editor of the Special Issue on Component-Based Software Engineering and Software Architecture

CORE rank A* conferences

ICSE (2012-2023) Technical/SEET/Poster tracks PC; ASE (2021-2022) Technical/NIER/SRC track PC; ESEC/FSE (2020, 2023) Technical track PC

CORE rank A/B conferences

APSEC (2017), CBSE (2010), ECSA (2020-2023), ICSA (2017-2023), ICSME (2021-

2022), QoSA (2011-2014), iFM (2017), SEAA (2020-2021), SEAMS (2022), SOFSEM (2020), WICSA (2016)

Other conferences and workshops

ASWEC (2013-2015), BCI (2012), CEJISS (2018), DEMESA (2019), DeMobile (2014), DoCEIS (2016-2020), ECASE (2019), FASSI (2015-2016), FMICS (2005, 2007), GE@ICSE (2019, 2023), ICPC (2021), MB4SP (2015), MEMICS (2008), MOBILESoft (2016-2021), QEST (2009), SANCS (2015), SERENE (2015-2016), SHIFT (2019), SOFSEM (2020), TAMC (2010), WCOP (2010)

Project boards

MASH MU (2021, Masaryk University)
GAMU (2021, Masaryk University)
IDEG ZCU (2021, University of West Bohemia)
IGA UK (2021, Charles University in Prague)
UGS CZU (2021, Czech University of Life Sciences Prague)
IGS SUO (2019, Silesian University in Opava)
GAUK (2010-2011, Charles University in Prague)

External PhD and Habilitation committees

- Tomas Bata University in Zlin, Czech Republic – Ho Le Thi Kim Nhung, PhD thesis proposal (2022)
- Mendel University in Brno, Czech Republic – Ivo Pisarovic, PhD thesis (2021)
- Chalmers University of Technology and Gothenburg University, Sweden – Federico Gaimo, PhD thesis (2020)
- Faculty of Mathematics and Physics, Charles University, Czech Republic – Rima Al-Ali, PhD thesis (2020)
- Brno University of Technology, Faculty of Information Technology, Czech Republic – M. Mohammed Kazzaz, PhD thesis (2020)
- Czech Technical University in Prague, Czech Republic – Miroslav Bures, Habilitation (2019)

SELECTED PUBLICATIONS

- [1] I. Jacobson, J. Sutherland, B. Kerr, and B. Buhnova. Better Scrum through Essence. *Software: Practice and Experience (Journal IF 3.200)*. Wiley, 2022, vol. 52, no. 6, 1531-1540.
- [2] B. Buhnova, T. Kazickova, M. Ge, L. Wallezky, F. Caputo, L. Carrubbo. A Cross-Domain Landscape of ICT Services in Smart Cities. In *Artificial Intelligence, Machine Learning, and Optimization Tools for Smart Cities (Book Chapter)*, Springer Optimization and Its Applications book series (SOIA, volume 186), 2022, pp 63–95.
- [3] R. Capilla, E. Cioroica, B. Buhnova, and Jan Bosch. On Autonomous Dynamic Software Ecosystems. *IEEE Transactions on Engineering Management (Journal IF 6.146)*. IEEE, 2022.
- [4] H. Bangui, M. Ge, and B. Buhnova. A hybrid machine learning model for intrusion detection in VANET. *Computing (Journal IF 2.220)*. Springer, 2022, vol. 104, no. 3, 503-531.
- [5] L. Happe, and B. Buhnova. Frustrations Steering Women away from Software Engineering. *IEEE Software (Journal IF 3.000)*. IEEE, 2022, vol. 39, no. 4, 63-69.
- [6] M. Macak, L. Daubner, M.F. Sani, and B. Buhnova. Process mining usage in cybersecurity and software reliability analysis: A systematic literature review. *Array*, Elsevier, 2021, vol. 13, 100120.
- [7] M. Macak, D. Kruzlova, S. Chren, and B. Buhnova. Using process mining for git log analysis of projects in a software development course. *Education and Information Technologies (Journal IF 2.953)*. Springer, 2021. Vol. 26, no. 5, 5939-5969.

- [8] L. Happe, B. Buhnova, A. Koziolk, and I. Wagner. Effective measures to foster girls' interest in secondary computer science education. *Education and Information Technologies (Journal IF 2.953)*. Springer, 2021. Vol. 26, no. 3, 2811-2829.
- [9] H. Bangui, M. Ge, B. Buhnova, and Le H. Trang. Towards faster big data analytics for anti-jamming applications in vehicular ad-hoc network. *Transactions on Emerging Telecommunications Technologies (Journal IF 2.638)*. Wiley, 2021. e4280.
- [10] M. Macák, M. Ge, and B. Buhnova. A Cross-Domain Comparative Study of Big Data Architectures. *International Journal of Cooperative Information Systems (Journal IF 1.929)*, 2020, vol. 29, no. 04 (2020): 2030001.
- [11] D. Gesvindr, O. Gasior, and B. Buhnova. Architecture design evaluation of PaaS cloud applications using generated prototypes: PaaSArch Cloud Prototyper tool. *Journal of Systems and Software (Journal IF 3.514)*, Elsevier, 2020, Volume 169 (2020): 110701.
- [12] M. Ge, H. Bangui and B. Buhnova. Big Data for Internet of Things: A Survey. *Future Generation Computer Systems (Journal IF 6.125)*, Elsevier, 2018, Volume 87, Issue 1, pages 601-614. ISSN 0167-739X.
- [13] F. Caputo, B. Buhnova and L. Walletzky. Investigating the role of smartness for sustainability: Insights from the Smart Grid domain. *Sustainability Science (Journal IF 5.301)*, Springer, 2018, Volume 13, Issue 5, pages 1299-1309. ISSN 1862-4065.
- [14] L. Happe, B. Buhnova and R. Reussner. Stateful component-based performance models. In *Software and Systems Modeling* journal (**Journal IF 1.876**), Volume 13, Issue 4, pages 1319-1343. Springer-Verlag, October 2014. ISSN 1619-1374.
- [15] A. Aleti, B. Buhnova, L. Grunske, A. Koziolk and I. Meedeniya. Software Architecture Optimization Methods: A Systematic Literature Review. In *IEEE Transactions on Software Engineering* journal (**Journal IF 6.112**), Volume 5, Issue 39, pages 658-683. IEEE Computer Society, May 2013. ISSN 0098-5589.
- [16] F. Brosch, H. Koziolk, B. Buhnova and R. Reussner. Architecture-Based Reliability Prediction with the Palladio Component Model. In *IEEE Transactions on Software Engineering* journal (**Journal IF 6.112**), Volume 38, Issue 6, pages 1319-1339. IEEE Computer Society, Nov.-Dec. 2012. ISSN 0098-5589.

Barbora Buhnova is a (co-)author of over **130 papers** in renowned journals and proceedings (with over **30 journal publications**). Find the complete list in Google Scholar at <https://scholar.google.com/citations?user=3J7jHK4AAAAAJ>.

LANGUAGES

Native in Czech
Proficiency in English
Elementary in German, French, Spanish, Slovak