Michel Albonico

Associate Professor@SDU

Vejle
Denmark
✱ *21 December 1984*
✉ mical@mmmi.sdu.dk
🌐 michel.iotrixx.com.br
 michelalbonico

Education

2014–2017	**Ph.D.**, *IMT Atlantique Bretagne Pays de la Loire*, Nantes, France
	Thesis: Controlling Cloud-Based Systems for Elasticity Testing
2008–2011	**M.Sc.**, *Federal University of Paraná (UFPR)*, Curitiba, Brazil
	Thesis: HadoopTest - A Testing Controller for MapReduce-based Systems
2008-2009	**Ed.**, *Federal University of Lavras (UFLA)*, Lavras, Brazil
	Monography: A Study of Information Systems Management Applied to the Enterprise SMO Internet Provider
2003–2007	**B.Sc.**, *University of the West of Santa Catarina (UNOESC)*, S. M. Oeste, Brazil
	Monography: A Study of the High Availability of a Distributed CORBA System over a VPN

Languages

Portuguese	Native	*Brazilian Portuguese*
English	Advanced	*Long term collaborations with international institutions.*
French	Intermediate-Advanced	*Lived for 3 years in France.*
Spanish	Basic	*Live in the border with Argentina.*
Danish	Learning	

Experience

Professional

2019–Present	**Software Engineering Consultant**, *TriXX Software*, Brazil
	Mentoring students in cross-platform application development and industry best practices.
2026–Present	**Associate Professor**, *SDU*, Vejle
	Teaching Software Engineering classes.
2012–Present	**Associate Professor (on leave)**, *UTFPR*, Brazil
	Teaching Software Engineering, Robotics Software, and Distributed Programming. Leader of the IntelAgir research group. Permanent member of PPGCA Master's program (since 2024).
2025	**Head of CS Department**, *UTFPR*, Brazil
	Leading the team, managing faculty and department physical infrastructure.
2018–2020	**Undergraduate Program Coordinator**, *UTFPR*, Brazil
	Coordinated a Computer Science program.

2012 **Lecturer and Undergraduate Program Coordinator**, *Unisep*, Dois Vizinhos, Brazil
Coordinated a undergraduate program and taught Computer Science courses.

2011–2012 **Lecturer**, *UNOESC*, S.M Oeste, Brazil
Taught courses in software engineering and programming.

2008–2012 **Technical Course Coordinator and Lecturer**, *FAF*, Barracão, Brazil
Coordinater a technical course and taught foundational computing courses.

2006–2008 **Infrastructure Manager**, *SMO Internet Provider*, S.M. Oeste, Brazil
Managed network infrastructure and ensured service reliability.

2004–2006 **Enterpreneur**, *Dominio Informática*, Dionisio Cerqueira, Brazil
Technical support and software maintainance.

Training

2025 **Generative AI for Software Development Professional Certificate** , *DeepLearning.AI*, Coursera
15 hour

2024 **ChatGPT Prompt Engineering for Developers**, *DeepLearning.AI*, Coursera
1 hour

2022 **Winter School in Software Engineering**, *National Research University Higher School of Econ, HSE*, Russia
33 hours

2020 **CAA Training for BNI**, *INEP/MEC*, Brazil
24 hours

2016 **TAROT Summer School**, *Télécom Sud Paris*, France
40 hours

2016 **French for Foreigners (Advanced)**, *Maison des Chercheurs Étrangers, MCE*, France
30 hours

2015 **Grammar and Punctuation**, *University of California, Irvine, UCI*, USA
20 hours

2014–2015 **My English Online**, *Cengage Learning / CAPES, MEO*, Brazil
240 hours

2014–2015 **French Course**, *Ecole des Mines de Nantes, EMN*, France
30 hours

2014 **French Course**, *Ecole des Mines de Nantes, EMN*, France
15 hours

2012–2013 **Intermediate and Advanced English**, *Open English, OE*, Brazil
160 hours

2011 **MC1 - Cloud Computing: Elastic and Secure**, *Universidade Federal de Santa Catarina, UFSC*, Brazil
8 hours

2011	**Expanding Horizons**, *FISK English Courses, FISK*, Brazil
	40 hours
2010	**Flying High**, *FISK English Courses, FISK*, Brazil
	40 hours
2009	**Spreading Wings**, *FISK English Courses, FISK*, Brazil
	40 hours
2009	**Aiming at the Sky**, *FISK English Courses, FISK*, Brazil
	40 hours
2007	**Asterisk VOIP**, *VOffice, VO*, Brazil
	40 hours
2007	**Basic 1**, *FISK English Courses, FISK*, Brazil
	40 hours
2006	**Structured Optical and Metallic Cabling**, *SENAC - São Miguel do Oeste, SENAC*, Brazil
	40 hours

Research

2020–2021	**Postdoctoral Researcher**, *S2 Group, VU Amsterdam*, the Netherlands
	Research on green software engineering for robotic systems, focusing on ROS.
2023–2024	**Visiting Researcher**, *ISW, University of Stuttgart*, Germany
	Research on ML4GreenROS: Using machine learning to optimize ROS software efficiency.
2024	**Short-Term Research Visit**, *INESC TEC, University of Porto*, Portugal
	Research on static analysis of ROS software for energy efficiency.

Research Interests

Primary focus	Software Engineering for Robotics, ROS-based Robotics Software, Robotics in Education, and Energy-efficient Software.
Collaborations	Prof. Andreas Wortmann, ISW@University of Stuttgart, Germany
	Prof. Ivano Malavolta, S2 Group@VU Amsterdam, the Netherlands.
	Prof. Nuno Macedo, INESC/TEC@University of Porto, Portugal
	Prof. Felipe Fronchetti, Luisiana State University (LSU), USA
	PPGCI Master's Program - UTFPR, Cornélio Procópio, Brazil
	PPGCA Master's Program - UTFPR, Curitiba, Brazil

Research Projects

2024–Present	**Social Aspects of ROS Projects**, *UTFPR, LSU*
	Qualitative study of social aspects in open-source ROS projects.
2024–Present	**HighConfigurable ROS**, *UTFPR, University of Porto*
	Static analysis of ROS software projects aiming to enhance energy efficiency and performance.
2023–Present	**ML4GreenROS**, *UTFPR, University of Stuttgart, VU Amsterdam*
	Developing machine learning-based adaptive configurations to improve performance and energy efficiency in ROS-based robotic systems.

2020–2023 **ElasIoT: Elastic Solutions for IoT Software**, *UTFPR*
Investigating scalable and adaptable cloud/edge strategies for IoT environments to enhance system performance and resource utilization.

2020–2023 **GreenROS**, *UTFPR, VU Amsterdam*
Studying energy-efficient software architectures for robotic systems, leveraging software repository mining techniques.

2020–2022 **Green Tactics for Robotics Software**, *VU Amsterdam*
Developing software engineering tactics for optimizing energy consumption in robotic applications.

2016–2017 **Dizolo**, *IMT Atlantique*
Exploring constraints on data in cyber-physical systems for factories of the future.

2011–2011 **TaaS: Testing Applications for Cloud Computing**, *UTFPR, INRIA, UFSC*
Building a framework for large-scale cloud testing using fault injection and test automation.

Research Funding

2025-Present **Visiting Expert Researcher (Short-term)**, funded by ICM - Germany ($\approx$ BRL 65,117 / EUR 10,018).

2024-2025 Robotics Software Innovation Project, **Researcher**, funded by SEBRAE - Brazil (BRL 150,000 / $\approx$ EUR 25,000).

2024 **Visiting Researcher (Short-term)**, funded by INESC TEC, University of Porto - Portugal ($\approx$ BRL 30,000 / EUR 5,000).

2024 ML4GreenROS Project, **Coordinator/Postdoctoral Researcher**, funded by CNPq - Brazil (BRL 141,000 / $\approx$ EUR 23,500).

2023-2024 **Visiting Expert (Mid-term)**, funded by ICM - Germany ($\approx$ BRL 124,200 / EUR 20,700).

2020-2021 **Postdoctoral Fellow**, funded by NWO - the Netherlands ($\approx$ BRL 165,000 / EUR 27,500).

2018-2019 Smart Devices Project, **Coordinator/Developer**, funded by UTFPR - Brazil (BRL 30,000 / $\approx$ EUR 5,000).

2018-2020 ElasIoT Project, **Coordinator/Researcher**, funded by CNPq and Fundação Araucária - Brazil (BRL 39,940 / $\approx$ EUR 6,650).

2017-2018 IoTriXX Dashboard Project, **Coordinator/Researcher/Developer**, funded by Fundação Araucária - Brazil (BRL 120,000 / $\approx$ EUR 20,000).

2017-2018 SmartLock Project, **Researcher/Developer**, funded by Fundação Araucária - Brazil (BRL 120,000 / $\approx$ EUR 20,000).

2014-2017 Cloud Elasticity Testing Project, **Coordinator/Ph.D. candidate**, funded by CAPES - Brazil (BRL 690,000 / $\approx$ EUR 115,000).

Academic Outreach

2023-2025 Transformar Project (building equipment for robotics/programming teaching), **Researcher**, Public Elementary Schools, Extension/Innovation Project, 2 hours/week

2022-2023	Robotics in Education, **Coordinator**, Public Elementary Schools, Extension Project, 30 hours
2019-2021	Safety at Work App, **Coordinator/Tech Leader**, Vibra SA (private company), Innovation Project, 100 hours
2018-2019	Computing and Electronic Prototyping with High-Ability Students, **Coordinator/Teacher**, Public Elementary Schools, Extension Project, 30 hours

Leadership

2025-Present	Head of Francisco Beltrão's Computer Science Department, UTFPR - Brazil.
2018-Present	Head of IntelAgir Research Group, UTFPR - Brazil.
2018-2020	Computer Science undergraduate program Coordinator, UTFPR - Brazil.
2011	Computer Science undergraduate program Coordinator, Unisep - Brazil.
2009-2011	Computer Science undergraduate program Coordinator, FAF - Brazil.

Mentorship

Ongoing Supervisions

Master's Theses

2025-Present	Walysson Duarte. Analysing the benefits of the Elixir library (RCLex) on programming highly concurrent robotics software. Master's thesis in Informatics - Federal University of Technology - Paraná (UTFPR). (Co-supervisor).
2025-Present	Douglas de Souza. Challenges for a donation platform orchestrated over blockchain. Master's thesis in Informatics - Federal University of Technology - Paraná (UTFPR). (Co-supervisor).
2025-Present	Rodrigo Iser. Analysis of Performance and Energy Consumption of Simulation Tools for ROS. Master's thesis in Informatics - Federal University of Technology - Paraná (UTFPR). (Co-supervisor).
2024-Present	Ricardo de Souza. A Gamification Tool for Teaching Green/Energy-Efficient Programming. Master's thesis in Applied Computing - Federal University of Technology - Paraná (UTFPR). (Co-supervisor).
2024-Present	Maciel Felipe Borges. A Study on the Evolution of the Robot Operating System (ROS) with a Focus on Energy Efficiency. Master's thesis in Informatics - Federal University of Technology - Paraná (UTFPR). (Co-supervisor).

Undergrad. Research

2024-Present	Manuela Bechara Cannizza. Understanding the impact of programming language on ROS energy efficiency. (Information Systems - FB) - Federal University of Technology - Paraná (UTFPR). (Supervisor).
2025	Pedro Peruzzo. Course: Software Modeling and Design. Teaching Assistant (Information Systems - FB) - Federal University of Technology - Paraná (UTFPR) (Supervisor).

2024-2025 Alexia Celina Nielsen. Empirical Experiments on the Energy Consumption of Robotics Algorithms in ROS - Topic-Based/Publish-Subscribe Communication. Undergraduate Research (Information Systems - FB) - Federal University of Technology - Paraná (UTFPR), Fundação Araucária. (Supervisor).

Completed Supervisions

Master's Theses

2024   Alexander Kraus. Continuous Optimization of ROS Configurations for Energy Efficiency. Master's thesis in ISW - University of Stuttgart. (Co-supervisor).

2021   Milica Dordevic. Empirical Evaluation of Computation Offloading Strategies in Robotic Systems. Master's thesis in Computer Science - Vrije Universiteit. Co-supervisor: Michel Albonico.

2021   Kwame Chan Jong Chu. A Study on the Resource Utilization of SLAM Algorithms on Simulated and Real-World ROS Systems. Master's thesis in Computer Science - Vrije Universiteit. Co-supervisor: Michel Albonico.

2021   Engel Hamer. Resource Utilization of 2D SLAM Algorithms in ROS-Based Systems: an Empirical Evaluation. Master's thesis in Computer Science - Vrije Universiteit. Co-supervisor: Michel Albonico.

Bachelor Project

2025-Present   Phillipp Schlüter. Mining critical navigation points from maps. Co-supervision. Supervisor: Andreas Wortmann.

2023   Juliano Soares. Planning of Basic Electronics Content for Introductory Arduino. Specialization Thesis in Informatics - Federal University of Technology - Paraná (UTFPR). Supervisor: Michel Albonico.

2023   Lucas Augusto Peruffo. Development of an Interaction Device for Immersive Education Environments. Undergraduate Thesis in Informatics - Federal University of Technology - Paraná (UTFPR). Supervisor: Michel Albonico.

2023   Everson Borges da Rosa. InterativeEdu: Prototyping an Interactive Floor as a Learning Tool Using Open Technology. Undergraduate Thesis in Informatics - Federal University of Technology - Paraná (UTFPR). Supervisor: Michel Albonico.

2021   Gustavo Henrique B. Slomski. OiArduBot: A Domain-Specific Language for Teaching Robotics with Open Technology. Undergraduate Thesis in Informatics - Federal University of Technology - Paraná (UTFPR). Supervisor: Michel Albonico.

2022   Alexandre Juarez Corneau. Empirical Study of Software for IoT and Robotics Systems. Undergraduate Research (Informatics) - Federal University of Technology - Paraná (UTFPR), Fundação Araucária. Supervisor: Michel Albonico.

2021   Joe Hopkinson. Benchmarking Path Coverage Algorithms in ROS-Based Systems. Undergraduate Thesis in Computer Science - Vrije Universiteit. Supervisor: Michel Albonico.

2021   Etienne Herbeaux. Benchmarking SLAM Algorithms in ROS-Based Systems. Undergraduate Thesis in Computer Science - Vrije Universiteit. Supervisor: Michel Albonico.

2021   Karl Plagemann. Benchmarking the Energy Efficiency of Different ROS Versions and Configurations. Undergraduate Thesis in Computer Science - Vrije Universiteit. Supervisor: Michel Albonico.

2020 Gustavo Slomski. An Optimized Programming Language for Teaching Educational Robotics with Open Technologies. Undergraduate Thesis in Informatics - Federal University of Technology - Paraná (UTFPR). Supervisor: Michel Albonico.

2012 Cleverson Massaroli. Comparison Between Mahou and Relational Database Management Systems. Undergraduate Thesis in Information Systems - União de Ensino do Sudoeste do Paraná. Supervisor: Michel Albonico.

2012 Paulo Vitor Cogo. Project for the Implementation of Optical Fiber for the Margarida Galvan Neighborhood in Dois Vizinhos-PR. Undergraduate Thesis in Information Systems - União de Ensino do Sudoeste do Paraná. Supervisor: Michel Albonico.

2012 Fernando Zotti and Fernando Socolovski. Web System for Fuel Station Users. Undergraduate Thesis in Information Systems - União de Ensino do Sudoeste do Paraná. Supervisor: Michel Albonico.

2012 Henrique Koerich. A Study on Cloud Computing with Application of Software Quality Testing. Undergraduate Thesis in Information Systems - União de Ensino do Sudoeste do Paraná. Supervisor: Michel Albonico.

2011 Andreia Salete Mayer Eberhart. Automation of Residential Equipment Using Java. Undergraduate Thesis in Internet Systems Technology - Faculdade da Fronteira. Supervisor: Michel Albonico.

2011 Diego Delazeri. System for Updating Championship Classification Tables. Undergraduate Thesis in Internet Systems Technology - Faculdade da Fronteira. Supervisor: Michel Albonico.

2011 Lucas Ecco. Measurement of Degradation by Noise in Wired and Wireless Networks. Undergraduate Thesis in Internet Systems Technology - Faculdade da Fronteira. Supervisor: Michel Albonico.

2011 Everton da Silva. System for Assisting Software Acquisition. Undergraduate Thesis in Internet Systems Technology - Faculdade da Fronteira. Supervisor: Michel Albonico.

2011 Alex Roberto Grunwaldt and Edson Renato Drews. System for Access Ticketing and Ad Mining on News Websites Applied to the Click Amerios Portal. Undergraduate Thesis in Internet Systems Technology - Universidade do Oeste de Santa Catarina. Supervisor: Michel Albonico.

2011 Jean Carlos Copati. Call Management System - Help Desk. Undergraduate Thesis in Internet Systems Technology - Universidade do Oeste de Santa Catarina. Supervisor: Michel Albonico.

2010 Douglas Geova Kaktin. Comparison of Similarity Functions for Open Source Database Management Systems. Undergraduate Thesis in Internet Systems Technology - Faculdade da Fronteira. Supervisor: Michel Albonico.

2010 Marcio Rodrigo Backes. Algorithm for Searching and Sorting Log Files Using the MapReduce Framework. Undergraduate Thesis in Internet Systems Technology - Faculdade da Fronteira. Supervisor: Michel Albonico.

2009 Daniely da Silva Loiola. Cedro News - Information Portal for the City of São José do Cedro. Undergraduate Thesis in Informatics Technology - Faculdade da Fronteira. Supervisor: Michel Albonico.

2009	Cleder F. Perufo. TECHNICALL - System for Technical Support Management of Wireless Providers. Undergraduate Thesis in Informatics Technology - Faculdade da Fronteira. Supervisor: Michel Albonico.

Undergrad.
Research

2021	Bruno Cardoso. Preliminary Listing of Works on Robotic Internet of Things (IoRT) Software through Systematic Literature Review. Undergraduate Research (Informatics) - Federal University of Technology - Paraná (UTFPR). Supervisor: Michel Albonico.
2021	Berry Chen. Extracting Architectural Components from ROS Executions. Undergraduate Research (Computer Science) - Vrije Universiteit. Supervisor: Michel Albonico.
2021	Leonardo Pilatti. Programming and Conducting Experiments with TurtleBot. Undergraduate Research (Informatics) - Federal University of Technology - Paraná (UTFPR), Fundação Araucária. Supervisor: Michel Albonico.
2021	Wilson Lira. Automation of Scripts for Data Extraction from Google Scholar. Undergraduate Research (Informatics) - Federal University of Technology - Paraná (UTFPR). Supervisor: Michel Albonico.
2020	Bruno Cardoso. Mining Software Repositories of IoRT. Undergraduate Research (Informatics) - Federal University of Technology - Paraná (UTFPR), Fundação Araucária. Supervisor: Michel Albonico.

Other Supervisions

2024	Li Lin. Development of Artificial Intelligence Models for Selecting ROS Configuration Parameters. ISW - University of Stuttgart. Supervisor: Michel Albonico.
2024	Monisha Chandrashekar. Adaptations of an Open-Source Energy Meter for Robotics Experiments. ISW - University of Stuttgart. Supervisor: Michel Albonico.

Awards and Recognition

2025	Selected as Associate Professors for the Centre for Software Technology at the University of Southern Denmark, Vejle.
	Qualified for the position of DIAS Fellow in Engineering at the University of Southern Denmark, Odense - Assistant Professor in Software Engineering.
2024	Elected Head of the Computer Science Department at UTFPR - Francisco Beltrão Campus.
2023	Awarded a postdoctoral fellowship funded by CNPq (Brazil) for research in Germany.
	Received the Best Paper Award at the Workshop on Robotics Software Engineering.
	Recognized as a Distinguished Reviewer at the Brazilian Symposium on Informatics in Education.
2018	Elected Coordinator of the Undergraduate Program in Computer Science at UTFPR.
2015	Diplôme d'Études en Lange Française - DELF B1.
2014	Awarded a full Ph.D. scholarship in France, funded by CAPES (Brazil).

2012 Ranked first for the Assistant Professor position at UTFPR.

Professional Services

2025 *Program committee chair* of 1st Workshop on Software Engineering for Functional Programming (SE4FP).

Program committee member of European Conference on Software Architecture (ECSA).

Program committee member of 5th LATAM School - The Latin American School in Software Engineering Research .

Program committee member of Brazilian Symposium on Software Engineering - Insightful Ideas and Emerging Results Track (SBES-IIER)

External reviewer of Journal of Brazilian Computer Society.

External reviewer of Frontiers in Robotics and AI.

2024 *External reviewer* of Transactions on Software Engineering and Methodology (TOSEM).

External reviewer of Software Quality Journal (SQJ).

Program committee member of Brazilian Symposium on Informatics in Education (SBIE)

Program committee member of Brazilian Symposium on Software Engineering (SBES)

Program committee member of Workshop on Robotics Software Engineering (RoSE)

External reviewer of Frontiers in Robotics and AI.

Program committee member of Mining Software Repositories (MSR).

Program committee member of International Conference on Intelligent Robots and Systems (IROS).

External reviewer of Journal of the Brazilian Computer Society (JBCS).

External reviewer of Internacional Journal of Robotics Research (IJRR)

External reviewer of European Conference on Software Architecture (ECSA) - Post Proceedings.

External reviewer of Applied Science Open Access Journal.

2023 *Program committee member* of Brazilian Symposium on Software Engineering (SBES) -Insightful Ideas and Emerging Results (IIER)

Program committee member ofInternational Symposium on Software Testing and Analysis (ISSTA) - Artifact Evaluation (AE)

External reviewer of Open Research Europe.

Program committee member of Workshop on Informatics in Schools (WIE), Brazil

Program committee member of Mining Software Repositories (MSR) - Industrial Track

Program committee member of Context-aware, Autonomous, and Smart Architectures (CASA)@ECSA.

2022   *Program committee member* of Workshop on Robotics Software Engineering (RoSE)

Program committee member of International Conference on Open Source Systems (OSS)

Program committee member of Workshop on Mining Software Repositories for Software Architecture (MSR4SA)

Program committee member of Mining Software Repositories (MSR)

Program committee member of Information and Software Technology (IST)

Sub-reviewer of International Conference on Software Engineering (ICSE).

External reviewer of European Conference on Software Architecture (ECSA) - Post Proceedings.

Program committee member of Context-aware, Autonomous, and Smart Architectures (CASA)@ECSA.

2021   *Program committee member* of Workshop on Robotics Software Engineering

External reviewer of Latin American Congress on Free Software and Open Technologies (Latinoware)

External reviewer of Journal of the Brazilian Computer Society (JBCS).

External reviewer of IEEE Software.

External reviewer of IEEE Sensors Letters.

Sub-reviewer of International Conference on Software Engineering (ICSE).

Program committee member of Context-aware, Autonomous, and Smart Architectures (CASA)@ECSA.

External reviewer of IOP e-books.

2018   *Program committee member* of Regional School of Software Engineering (ERES) - Dois Vizinhos, Brazil

Teaching

UTFPR

2024–Present   **Bachelor's in Information Systems**: Requirements Engineering; Software Design and Modeling; Software Construction, Validation and Maintenance; Distributed Applications.

2019–2025   **Bachelor's in Computer Science**: Educational Robotics; Distributed Applications.

2023   **Bachelor's in Computer Science**: Software Engineering, Systems Analysis.

2022   **Bachelor's in Computer Science**: Software Engineering; Systems Analysis; Distributed Applications.

2021   **Bachelor's in Computer Science**: Distributed Applications; Software Engineering; Introduction to Programming Languages.

2020 **Bachelor's in Computer Science**: Computer Architecture; Software Engineering.

2019 **Bachelor's in Computer Science**: Computer Architecture; Distributed Applications.

2018 **Bachelor's in Computer Science**: Computing 1 (Algorithms); Computer Networks; Distributed Applications.

2017 **Bachelor's in Computer Science**: Computer Networks; Software Engineering; Data Structures.

2013 **Bachelor's in Computer Science**: Databases; Computing I (Algorithms); Instrumental Informatics; Frameworks for Data Storage and Persistence.

FAF

2012 **Technology in Internet Systems**: Databases II; Programming Language III (Java for Web).

2011 **Technology in Internet Systems**: Server Administration, Basic Internet Environment Concepts; E-commerce and Marketing; Object-Oriented Programming.

2010 **Technology in Internet Systems**: Server Administration for the Internet; Databases II; Multimedia Systems for the Internet Environment.

2009 **Technology in Internet Systems**: Databases II; Programming Language II (HTML/PHP); Basic Informatics Concepts.

Unisep

2011 **Bachelor's in Information Systems**: Computer Networks II; Computer Networks I; Distributed Systems; Web Infrastructure.

2010 **Bachelor's in Information Systems**: Distributed Systems.

2009 **Bachelor's in Information Systems**: Complementary Curricular Activities II (Basic Linux).

UNOESC

2012 **Bachelor's in Information Systems**: Theory of Computation; Final Graduation Project II; Databases I; Advanced Topics in Databases.

Publications

Journal Articles

2026 (Accepted) APSAN, R.; STOICO, V; ALBONICO, M.; DHAR, R.; VAIDHYANATHAN, K.; MALAVOLTA, I. **Generating Energy-Efficient Code via Large-Language Models - Where are we now?** *48th IEEE/ACM International Conference on Software Engineering*, 2026.

2025 HAMER, E.; ALBONICO, M.; MALAVOLTA, I. **Resource Utilization of 2D SLAM Algorithms in ROS-Based Systems: an Empirical Evaluation**. *Journal of the Brazilian Computer Society*, 2025.

2025 ALBONICO, M.; CANIZZA, M. B.; WORTMANN, Andreas. **Energy Efficiency in ROS Communication: A Comparison Across Programming Languages and Workloads**. *Frontiers In Robotics And AI*, vol. 12, p. 1, 2025.

2025   SOLIMAN, M.; ALBONICO, M.; MALAVOLTA, I.; WORTMANN, Andreas. **Mining Software Repositories for Software Architecture – a Systematic Mapping Study**. *Information And Software Technology*, vol. 1, p. 1, 2025.

2023   ALBONICO, M.; DORDEVIC, M.; HAMER, E.; MALAVOLTA, I. **Software engineering research on the Robot Operating System: A systematic mapping study**. *Journal of Systems and Software*, vol. 197, p. 111574, 2023.

2023   DORDEVIC, M.; ALBONICO, M.; LEWIS, G. A.; MALAVOLTA, I.; LAGO, P. **Computation Offloading for Ground Robotic Systems Communicating over WiFi – An Empirical Exploration on Performance and Energy Trade-offs**. *Empirical Software Engineering (EMSE)*, 2023.

2020   VARELA, P.; ALBONICO, M.; JUSTINO, E.; ASSIS, J. **Authorship Attribution in Latin Languages using Stylometry**. *IEEE Latin America Transactions*, vol. 18, p. 729-735, 2020.

Book Chapters

2018   ALBONICO, MICHEL; MOTTU, JEAN-MARIE; SUNYÉ, GERSON; ALVARES, FREDERICO. **Controlling Cloud-Based Systems for Elasticity Test Reproduction**. *Communications in Computer and Information Science*, Springer International Publishing, vol. 864, p. 200-222, 2018.

Conference Papers

2024   ALBONICO, M.; VARELA, PAULO J.; ROHLING, ADAIR; WORTMANN, Andreas. **Energy Efficiency of ROS Nodes in Different Languages: Publisher-Subscriber Case Studies**. In: *International Workshop on Robotics Software Engineering (RoSE)*, 2024, Lisboa, Portugal.

2023   ALBONICO, MICHEL; VARELA, PAULO JÚNIOR. **A Report on the Use of Chat-GPT in Software Engineering and Systems Analysis Courses**. In: *SBES 2023: XXXVII Brazilian Symposium on Software Engineering*, Campo Grande, Brazil. Proceedings of the XXXVII Brazilian Symposium on Software Engineering, ACM, p. 303.

2022   MAYER, ROBERTO; VARELA, PAULO; ALBONICO, MICHEL; ROHLING, ADAIR; STEFFEN, VILMAR. **Experiências de um Jogo Educacional Digital para auxiliar no Processo de Ensino-Aprendizagem de Transformações Químicas para o Ensino Médio**. In: *Workshop de Informática na Escola*, 2022, Brasil. Anais do XXVIII Workshop de Informática na Escola (WIE 2022), p. 59.

2022   SLOMSKI, GUSTAVO; JOSE ROHLING, ADAIR; VARELA, PAULO; ALBONICO, MICHEL. **HelloArduBot: A DSL For Teaching Programming To Incoming Students With Open-source Robotic (OSR) Projects**. In: *OpenSym 2022: The 18th International Symposium on Open Collaboration*, 2022, Madrid, Spain. The 18th International Symposium on Open Collaboration, p. 1.

2021 ALBONICO, MICHEL; MALAVOLTA, IVANO; PINTO, GUSTAVO; GUZMAN, EMITZA; CHINNAPPAN, KATERINA; LAGO, PATRICIA. **Mining Energy-Related Practices in Robotics Software**. In: *2021 IEEE/ACM 18th International Conference on Mining Software Repositories (MSR)*, 2021, Madrid. 2021 IEEE/ACM 18th International Conference on Mining Software Repositories (MSR), p. 483.

2021 CHINNAPPAN, K., MALAVOLTA, I., Lewis, G.A., ALBONICO, M. and LAGO, P., 2021, August. **Architectural tactics for energy-aware robotics software: A preliminary study**. In *European Conference on Software Architecture* (pp. 164-171).

2021 ALBONICO, MICHEL; VARELA, PAULO; ROHLING, A. J.; SOARES, J. **Mining Evidences of Internet of Robotic Things (IoRT) Software from Open Source Projects**. In: *Brazilian Symposium on Software Components, Architectures, and Reuse*, 2021, Joinville. SBCARS, 2021.

2019 ALBONICO, MICHEL; VARELA, PAULO. **Towards Short Test Sequences for Performance Assessment of Elastic Cloud-based Systems**. In: *9th International Conference on Cloud Computing and Services Science*, 2019, Heraklion. Proceedings of the 9th International Conference on Cloud Computing and Services Science, p. 165.

2019 FIORIO, ROSAINE; VARELA, PAULO; ALBONICO, MICHEL; SEMLER, JHON-NATAN RICARDO. **Linguisticun: Uma Ferramenta de Auxílio ao Ensino da Língua Portuguesa e à Linguística Computacional**. In: *XXX Simpósio Brasileiro de Informática na Educação (Brazilian Symposium on Computers in Education)*, 2019, Brasília. Anais do XXX Simpósio Brasileiro de Informática na Educação (SBIE 2019), p. 11.

2018 VARELA, PAULO J.; ALBONICO, MICHEL; JUSTINO, EDSON J. R.; BORTOLOZZI, FLAVIO. **A Computational Approach for Authorship Attribution on Multiple Languages**. In: *2018 International Joint Conference on Neural Networks (IJCNN)*, 2018, Rio de Janeiro. 2018 International Joint Conference on Neural Networks (IJCNN), p. 1.

2017 ALBONICO, MICHEL; ALESIO, STEFANO DI; MOTTU, JEAN-MARIE; SEN, SAGAR; SUNYE, GERSON. **Generating Test Sequences to Assess the Performance of Elastic Cloud-Based Systems**. In: *2017 IEEE 10th International Conference on Cloud Computing (CLOUD)*, 2017, Honolulu. 2017 IEEE 10th International Conference on Cloud Computing (CLOUD), p. 383.

2017 ALBONICO, MICHEL; MOTTU, JEAN-MARIE; SUNYÉ, GERSON; ALVARES, FREDERICO. **Making Cloud-based Systems Elasticity Testing Reproducible**. In: *7th International Conference on Cloud Computing and Services Science*, 2017, Porto. Proceedings of the 7th International Conference on Cloud Computing and Services Science, p. 523.

2016 ALBONICO, MICHEL; MOTTU, JEAN-MARIE; SUNYÉ, GERSON. **Monitoring-Based Testing of Elastic Cloud Computing Applications**. In: *Companion Publication for ACM/SPEC*, 2016, Delft. Companion Publication for ACM/SPEC on International Conference on Performance Engineering - ICPE '16 Companion, p. 3.

2016 ALBONICO, MICHEL; MOTTU, JEAN-MARIE; SUNYÉ, GERSON. **Controlling the elasticity of web applications on cloud computing**. In: *31st Annual ACM Symposium*, 2016, Pisa. Proceedings of the 31st Annual ACM Symposium on Applied Computing - SAC '16, p. 816.

2016 ALBONICO, MICHEL; BENELALLAM, AMINE; MOTTU, JEAN-MARIE; SUNYÉ, GERSON. **A DSL-based approach for elasticity testing of cloud systems**. In: *International Workshop on Domain-Specific Modeling - DSM 2016*, 2016, Amsterdam. Proceedings of the International Workshop on Domain-Specific Modeling, p. 8.

2011 MARYNOWSKI, J. E.; ALBONICO, M.; ALMEIDA, E. C.; SUNYE, G. **Testing MapReduce-based Systems (Short Paper)**. In: *Simpósio Brasileiro de Banco de Dados*, 2011, Florianópolis. Anais do Simpósio Brasileiro de Banco de Dados, 2011.

2011 VARELA, P. J.; ALBONICO, M.; GUARDA, Fabricio M.; CASARIN, N. V. **Um Panorama da Indústria de Software da Região Oeste de Santa Catarina Acerca do Uso das Boas Práticas de Engenharia de Software**. In: *Encontro Paranaense de Computação*, 2011, Cascavel. IV Encontro Paranaense de Computação.

2010 ALBONICO, M.; VARELA, P. J. **A Utilização de Boas Práticas de Engenharia de Software sob a Ótica das Softhouses do Oeste Catarinense**. In: *Seminário Nacional de Iniciação Científica - SIC*, 2010, Dois Vizinhos. Seminário Nacional de Iniciação Científica.

Extended Abstracts

2023 Chen, Z.; ALBONICO, M.; MALAVOLTA, IVANO. **Automatic Extraction of Time-windowed ROS Computation Graphs from ROS Bag Files**. In: *Robot Software Architectures Workshop@ICRA*, 2023, London.