Curriculum Vitae

Personal Information

Carlos Diego Nascimento Damasceno, Ph.D.
Postdoctoral Researcher
Radboud University Nijmegen
Faculty of Science
Department of Software Science
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Nijmegen, The Netherlands

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GitHub: https://github.com/damascenodiego
Google Scholar: https://scholar.google.com/citations?user=7iDXQbYAAAAJ
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Education

05/2016–07/2020 **Ph.D., Computer Science and Computational Mathematics**
University of São Paulo (ICMC-USP), São Carlos - SP, Brazil
Thesis: Learning finite state machine models from evolving systems
Advisor: Adenilso Simao
Co-Advisor: Mohammad Reza Mousavi

04/2020–12/2021 **MBA, Project Management**
University of São Paulo (USP/Esalq), Piracicaba-SP, Brazil
Thesis: Best practices for artifact quality management in software engineering research
Advisor: Isotilia Costa Melo

02/2014–05/2016 **M.Sc., Computer Science and Computational Mathematics**
University of São Paulo (ICMC-USP), São Carlos - SP, Brazil
Thesis: Evaluating finite state machine-based testing methods on RBAC systems
Advisor: Adenilso Simao

03/2008–01/2014 **B.Sc., Computer Science**
Federal University of Pará (UFPa), Belém - PA, Brazil

Professional Experience

08/2020–Current **Radboud University, Nijmegen, NL**
Position: Postdoctoral Researcher in Software Science
Project: Model-based Software Engineering; Search-based Software Engineering
Supervisor: Frits W. Vaandrager and Daniel Strüber

11/2018–12/2019 **University of Leicester, Leicester, UK**
Position: Visiting PhD Research Student
Project: Learning finite state machine models from evolving systems
Supervisor: Mohammad Reza Mousavi

10/2012–07/2013 **Siemens Corporate Research, Princeton, NJ, USA**
Position: Software Engineering Intern
Project: Tedeso: an extensible and interoperable model-based testing platform
Supervisor: Roberto S. Silva Filho

Pedagogical Experience

08/2021–01/2022 **Radboud University (ICiS)**
Role: Co-Lecturer
Course: Software Product Lines (NWI-IMC059)
Coordinator: Daniel Strüber

04/2020–11/2020 **University of São Paulo (ICMC-USP)**
Role: Student Co-Supervisor - Educational data mining
Course: Postgraduate Specialization Course on Applied Computing in Education (CAE-USP)
Supervisor: Seiji Isotani

03/2020–04/2020 **University of São Paulo (ICMC-USP)**
Role: Online tutor
Course: Scientific Writing and Methodology in Informatics in Education
Supervisor: Patrícia Jaques Maillard

07/2017–11/2017 **University of São Paulo (ICMC-USP)**
Role: Teaching Assistant
Course: Software Engineering for Embedded Systems
Supervisor: Adenilso Simao

02/2017–06/2017 **University of São Paulo (ICMC-USP)**
Role: Teaching Assistant
Course: Methods and Techniques for Analysis and Design of Reactive Systems
Supervisor: Adenilso Simao

07/2016–11/2016 **University of São Paulo (ICMC-USP)**
Role: Teaching Assistant
Course: Software Engineering for Embedded Systems
Supervisor: Adenilso Simao

07/2015–11/2015 **University of São Paulo (ICMC-USP)**
Role: Teaching Assistant
Course: Programming Languages and Applications
Supervisor: Adenilso Simao

02/2015–06/2015 **University of São Paulo (ICMC-USP)**
Role: Teaching Assistant
Course: Object-oriented programming
Supervisor: Adenilso Simao

Academic Experience

11/2018–12/2019 **Validation and Verification (VALVE)**
Position: Visiting PhD Research Student
Location: University of Leicester
Research topic: Software Engineering, Model-Based Testing
Supervisor: Mohammad Reza Mousavi

02/2014–07/2020 **Software Engineering Lab (LabES)**
Position: Research Assistant
Location: University of São Paulo (ICMC-USP)
Research topic: Software testing, Formal methods
Supervisor: Adenilso da Silva Simão

10/2013–12/2013 **Software Engineering Laboratory (LabES)**
Position: Scientific Initiation Scholar
Location: Federal University of Pará (UFPa)
Research topic: Software Engineering
Supervisor: Cleidson de Souza

08/2011–07/2012 **Laboratory of Computational Intelligence (LINC)**
Position: Scientific Initiation Scholar
Location: Federal University of Pará (UFPa)
Research topic: Data mining in bioinformatics
Supervisor: Adamo Santana / Fabio Lobato

05/2010–11/2010 **High Performance Network Planning Laboratory (LPRAD)**
Position: Scientific Initiation Scholar
Location: Federal University of Pará (UFPa)
Research topic: Similarity functions, Data pre-processing
Supervisor: Adamo Santana / Fabio Lobato

08/2009–12/2009 **Fortalecer Project**
Position: Intern
Location: Federal University of Pará (UFPa)
Main task: Teaching algorithms to middle school students
Supervisor: Janne Yukiko Yoshikawa Oeiras

Supervisions and Examinations

Supervised MSc Students

2021 *Lars van Arragon* (Master's specialisation: Software Science, Radboud University). Thesis Title: Towards Improving the Performance of Model Driven Optimisation: From Domain Models to Low-Level Encodings and Back. Graduated: December 2021.

2020 *Ricardo Dias Pacheco Martins* (Postgraduate Course on Computing Applied to Education, ICMC-USP). Thesis title: Educational data mining to predict the academic performance of physics students throughout high school (in pt-BR). Graduated: December 2020.

2020 *Mayk Fernando Choji* (Postgraduate Course on Computing Applied to Education, ICMC-USP). Thesis title: Enade data mining from 2016 to 2018: an analysis of the municipality of Araçatuba/SP (in pt-BR). Graduated: December 2020.

2020 *Luciana Passos da Silva* (Postgraduate Course on Computing Applied to Education, ICMC-USP). Thesis title: Study on the perception of undergraduates about aspects that contributed to their comprehensive training, in face-to-face higher technology courses (in pt-BR). Graduated: December 2020.

2020 *Daniel Rodrigues Corrêa* (Postgraduate Course on Computing Applied to Education, ICMC-USP). Thesis title: The experience of adapting students from on-site courses to online teaching applied during the pandemic period caused by COVID-19, at Unifacisa - Campina Grande, Paraíba (in pt-BR). Graduated: December 2020.

2020 *Carla Costa de Freitas Soares* (Postgraduate Course on Computing Applied to Education, ICMC-USP). Thesis title: Extracurricular factors and the quality of education in the state network in São Paulo (in pt-BR). Graduated: December 2020.

2020 *Alessandro Aparecido Barcellos* (Postgraduate Course on Computing Applied to Education, ICMC-USP). Thesis title: Open Data Mining - ENEM 2018 (in pt-BR). Graduated: December 2020.

Member of Examination Committees

2020 *Patrícia Takaki Neves* (Postgraduate Course on Computing Applied to Education, University of São Paulo - USP).

Publications

Publication type	Total	First author	Supervisor	Award/Nominee
Journal	4	2	1	0
Conference	10	5	0	2
Others	6	4	0	0
Total	20	11	1	2

Table 1: Publications per type

Overview

Journal Publications

1. Choji, M. F., Damasceno, C. D. N., Bittencourt, I. I., and Isotani, S. Mineração de dados do Enade de 2016 a 2018: uma análise sobre o município de Araçatuba. *RENOTE 19*, 2 (2021). [DOI]
2. Damasceno, C. D. N., Mousavi, M. R., and Simão, A. Learning by sampling: learning behavioral family models from software product lines. *Empirical Software Engineering 26*, 1 (Jan. 2021), 4. [DOI]
3. Damasceno, C. D. N., Masiero, P. C., and Simao, A. Similarity testing for role-based access control systems. *Journal of Software Engineering Research and Development 6*, 1 (Jan 2018), 1. [DOI]
4. Lobato, F. M. F., Damasceno, C. D. N., Leite, D. S., dos Santos, Â. K. R., Darnet, S., Francês, C. R., Vijaykumar, N. L., and de Santana, Á. L. Data analysis of multiplex sequencing at SOLiD platform: A probabilistic approach to characterization and reliability increase. *American Journal of Molecular Biology (AJMB) 08*, 01 (2018), 26–38. [DOI]

Conferences

1. van Harten, N., Damasceno, C. D., and Strüber, D. Model-driven optimization: Generating smart mutation operators for multi-objective problems. In *2022 48th Euromicro Conference on Software Engineering and Advanced Applications (SEAA)* (2022), SEAA '22, IEEE Computer Society
2. Tavassoli, S., Damasceno, C. D. N., Khosravi, R., and Mousavi, M. R. Adaptive behavioral model learning for software product lines. In *Proceedings of the 26th International Systems and Software Product Line Conference - Volume A* (2022), SPLC '22
3. Damasceno, C. D. N., and Strüber, D. Quality guidelines for research artifacts in model-driven engineering. In *MoDELS'21: ACM/IEEE 24th International Conference on Model Driven Engineering Languages and Systems, Virtual Event, Japan, 10-15 October, 2021* (2021), ACM. [DOI] [arXiv]
4. Damasceno, C. D. N., Mousavi, M. R., and Simao, A. Learning to reuse: Adaptive model learning for evolving systems. In *Integrated Formal Methods (iFM)* (2019), Springer. [DOI]

5. Damasceno, C. D. N., Mousavi, M. R., and Simao, A. Learning from difference: An automated approach for learning family models from software product lines. In *Proceeedings of the 23rd International Systems and Software Product Line Conference, SPLC 2019, Paris, France, September 9-13, 2019* (2019), ACM Press. [DOI]
6. Araujo, H. L. S., Damasceno, C. D. N., Dimitrova, R., Kefalidou, G., Mehtarizadeh, M., Mousavi, M. R., Onime, J., Ringert, J. O., Rojas, J. M., Verdezoto, N. X., and Wali, S. Trusted autonomous vehicles: an interactive exhibit. In *2019 IEEE International Conferences on Ubiquitous Computing Communications (IUCC)* (2019), IEEE, pp. 386–393. [DOI]
7. Damasceno, C. D. N., Masiero, P. C., and Simao, A. Evaluating test characteristics and effectiveness of FSM-based testing methods on RBAC systems. In *Proceedings of the 30th Brazilian Symposium on Software Engineering (SBES)* (2016), SBES '16, ACM, pp. 83–92. [DOI]
8. Abdalla, G., Damasceno, C. D., Guessi, M., Oquendo, F., and Nakagawa, E. Y. A systematic literature review on knowledge representation approaches for systems-of-systems. In *Proceedings of the 2015 IX Brazilian Symposium on Components, Architectures and Reuse Software* (2015), SBCARS '15, IEEE Computer Society, pp. 70–79. [DOI]
9. Damasceno, C. D. N., Delamaro, M. E., and Simão, A. Uma revisão sistemática em teste de segurança baseado em modelos. In *Anais do 8th Simpósio Brasileiro de Teste de Software Sistemático e Automatizado – Congresso Brasileiro de Software: Teoria e Prática (CBSoft '14)* (Porto Alegre, 2014), SBC. [Online in pt-BR]
10. Lobato, F. M. F., Damasceno, C. D., Machado, P. L., Ribeiro-Dos-Santos, A., Darnet, S. H., Goncalves, A. N. A., Alencar, D. O., and Santana, A. L. Abordagem probabilística para análise de confiabilidade de dados gerados em sequenciamentos multiplex na plataforma abi solid. In *Anais do XLIII Simpósio Brasileiro de Pesquisa Operacional* (2011), XLIII Simpósio Brasileiro de Pesquisa Operacional. [Online in pt-BR]

Extended Abstracts, Short Papers, Workshop Papers

1. Albers, M., Damasceno, C. D. N., and Strüber, D. A lightweight approach for model checking variability-based graph transformations. In *2022 13th International Workshop on Graph Computation Models (GCM)* (2022), GCM '22
2. Tavassoli, S., Damasceno, C. D. N., Mousavi, M. R., and Khosravi, R. A benchmark for active learning of variability-intensive systems. In *Proceedings of the 26th International Systems and Software Product Line Conference - Volume A* (2022), SPLC '22
3. Damasceno, C. D. N., Melo, I. C., and Strüber, D. Towards multi-criteria prioritization of best practices in research artifact sharing (emerging results). In *1st Workshop on Open Science Practices for Software Engineering (OpenScienSE 2021), Virtual Event, Brazil, 27 Sept - 1 Oct, 2021* (2021). [DOI] [arXiv]
4. Damasceno, C. D. N. Learning from families: Inferring behavioral variability from software product lines. In *PhD Symposium at Integrated Formal Methods (PhD-iFM)* (2019). [Online]

5. Damasceno, C. D., de Souza, P. S. L., and Simão, A. Um algoritmo paralelo para priorização de testes baseada em similaridade usando OpenMPI. In *Anais da 8a Escola Regional de Alto Desempenho de São Paulo (ERAD-SP 2017)* (Porto Alegre, Brasil, 2017), ERAD-SP 2017, SBC, pp. 65–68. [Online in pt-BR]
6. Damasceno, C. D. N., Moutinho, E. R., Lobato, F. M. F., Oliveira, I. I., Franca, A. S., and Santana, A. L. Simcleaner - sistema de padronização de bases de dados utilizando funções de similaridade. In *Anais da XIV Semana de Informática (SEMINF) e Escola Regional de Informática Norte (ERIN)* (Belém - PA, 2011), XIV Semana de Informática (SEMINF) e Escola Regional de Informática Norte (ERIN). [Online in pt-BR]

Technical Report

1. Simao, A., Carvalho, A., Damasceno, C. D. N., dos Santos, D., dos Santos Moreira, E., Tomita, F., Maia, G. S., Hortencio, H. P., Nakel, I., Peronti, I., Pereira, J. T., Siqueira, J. P. G., Cutigi, J. F., Saviniec, L., Mundim, L. R., e Moreira, L. E. M., de Freitas, L. E., Cherri, L. H., dos Santos, M. C., de Oliveira, M. B., Junior, M. C., Chandekar, P., Gonçalves, R. F., Butkeraites, R. B., Gesuatto, R., Goel, R., Mendonça, S., de Andrade, S. A., and Cardoso, T. Testing enviroments & optimization: Amdocs. In *3rd Workshop CeMEAI of Mathematical Solutions for Industrial Problems* (2017), CEPID/CeMEAI. [Online]
2. Abdalla, G., Damasceno, C. D. N., and Nakagawa, E. Y. A systematic literature review on systems-of-systems knowledge representation. Tech. Rep. 405, University of Sao Paulo (USP), mar 2015. [Online]

Posters

1. Damasceno, C. D. N., and Simao, A. Inference of family models for software product line testing. In *1o. Encontro Paulista dos Pós-graduandos em Computação (EPPC)* (2017), ICMC-USP

Thesis

1. Damasceno, C. D. N. *Learning finite state machine models of evolving systems: From evolution over time to variability in space*. PhD thesis, University of São Paulo (ICMC-USP), Sao Paulo, Sao Carlos, Brazil, may 2020. [Online]
2. Damasceno, C. D. N. Best practices for artifact quality management in software engineering research. MBA dissertation, University of São Paulo (USP/Esalq), Sao Paulo, Piracicaba, Brazil, dec 2021. [Online in pt-BR]
3. Damasceno, C. D. N. Evaluating finite state machine based testing methods on RBAC systems. Master's thesis, University of São Paulo (ICMC-USP), Sao Paulo, Sao Carlos, Brazil, may 2016. [Online]

Community Services

Organizing Commitee

1. [**FASE**]: International Conference on Fundamental Approaches to Software Engineering 2023. Role: Artifact Evaluation Committee Chair
2. [**SPLC**]: International Systems and Software Product Line Conference 2021. Role: Publicity Chair

Program Committee

1. [**SPLC**]: International Systems and Software Product Line Conference (2022)
2. [**VaMoS**]: International Working Conference on Variability Modelling of Software-Intensive Systems (2022)
3. [**OpenScienSE**]: Workshop on Open Science Practices for Software Engineering (2021)
4. [**SimES**]: Software Engineering Symposium UTFPR-DV (2017)

Artifact Evaluation Committee

1. [**SLE**]: International Conference on Software Language Engineering (2021)
2. [**ISSTA**]: International Symposium on Software Testing and Analysis (2021)

Journal Reviews

1. [**EMSE**]: Empirical Software Engineering (2021)
2. [**JSS**]: Journal of Systems and Software (2022)
3. [**SciCo**]: Science of Computer Programming (2020,2022)

External Reviewer

1. [**FASE**]: International Conference on Fundamental Approaches to Software Engineering (2022)
2. [**SEFM**]: International Conference on Software Engineering and Formal Methods (2021)
3. [**TASE**]: Theoretical Aspects of Software Engineering Symposium (2019)
4. [**SPLC**]: International Systems and Software Product Line Conference (2019, 2021)
5. [**SBSI**]: Brazilian Symposium on Information Systems (2019)
6. [**ICTAC**]: International Colloquium on Theoretical Aspects of Computing (2019)
7. [**FSEN**]: International Conference on Fundamentals of Software Engineering (2019)
8. [**FM**]: International Symposium on Formal Methods (2019)
9. [**SBES**]: Brazilian Symposium on Software Engineering (2016)

Student Volunteer

1. **[SPLC'19]** Student volunteer in the 23rd International Systems and Software Product Line Conference (SPLC) held in Paris (FR).
2. **[CBSoft'18]** Student volunteer in the IX Brazilian Symposium on Software Engineering (CBSoft) held in Sao Carlos, SP (BR).
3. **[Hour of Code'14]** Volunteered as tutor in the Hour of Code organized by the University of Sao Paulo on December 13th 2014.
4. **[FSM'09]** Volunteered in the World Social Forum 2009 (FSM'09) held in Belem-PA (BR) as a translator (portuguese-english) and providing IT support for participants.

Invited Speaker

1. **[SNCT/IFMA'21]** Semana Nacional de Ciência e Tecnologia do Instituto Federal do Maranhão (SNCT/IFMA). Title: *Software Sustainability and Scientific Research Data Management* (in pt-BR). Date: 30 Oct 2021.
2. **[CITIIC/USIL'21]**. Congreso Internacional de Tecnología e Innovación en Ingeniería y Computación (CITIIC) by Universidad San Ignacio de Loyola (USIL). Title: *Learning by Sampling: Learning behavioral family models from software product lines.* Date: 23 Aug 2021.
3. **[MDE Intelligence 2021]**. MDE Intelligence Workshop (co-located with the MoDELS21). Title: *Towards a Catalog of Best Practices for Quality Management of Model-Driven Engineering Research Artifacts.* Date: 11 Oct 2021.
4. **[FacompCast #05]**. Invited to the podcast organized by the Faculty of Informatics of the UFPa. Title: *Lessons and Challenges of an Academic Career.* Date: 21 Jul 2021.

Honors, Awards & Scholarships

USP/Esalq'20	Earned a scholarship to pursue a Master of Business Administration (MBA) in Project Management. The scholarship is part of a program for students with outstanding academic performance at the USP.
iFM'19	Earned the iFM PhD student bursary covering registration fees in the iFM 2019 held in Bergen (NO).
CyPhyAssure'19	Earned the CyPhyAssure ESR Funding covering travel and accommodation expenses to attend the CyPhyAssure'19 spring school held in York (UK).
SBES 2016	3rd Best Paper Award for the paper entitled *Evaluating test characteristics and effectiveness of FSM-based testing methods on RBAC systems* published in the XXX Brazilian Symposium on Software Engineering (SBES).
SBCARS 2015	3rd Best Paper Award for the paper entitled *A Systematic Literature Review on Knowledge Representation Approaches for Systems-of-Systems* published in the

	IX Brazilian Symposium on Software Components, Architectures and Reuse (SBCARS).
ICPC 2013	South America/Brazil Regional North Winner at the ACM International Collegiate Programming Contest 2013.
OBMEP 2005	Honorable Mention for performance on the 1st Brazilian Mathematical Olympiad for Public Schools (OBMEP).

Schools and Workshops Attended

TAROT 2020	Selected to attend the 20th International Summer School on Training And Research On Testing (TAROT) 2020 virtually held in Porto (PT); In the TAROT 2020, he attended panels on *software modeling and testing, automata learning, and formal verification*; He staged one presentation about his PhD research.
InnSciD'20	Selected to attend the São Paulo School of Advanced Science on Science Diplomacy and Innovation Diplomacy (InnSciD SP) 2020 virtually held in São Paulo (BR). In the InnSciD'20, he attended panels on *Science and Innovation Diplomacy*; He staged one presentation about the Innovation Ecosystem of the city of São Carlos, SP; and collaborated with the development of a roadmap for promoting Innovation Diplomacy to the Brazils Ministry of Foreign Affairs (MRE) .
CyPhyAssure'19	Selected to attend the first CyPhyAssure Spring School on computer-assisted assurance for autonomous robots. The school targeted PhD or early-stage researcher working in the area of formal methods, safety, and autonomous systems. It was held in York (UK) on 19-22 March 2019.
3WSMPI'17	Attended the 3rd Workshop CeMEAI of Mathematical Solutions for Industrial Problems (WSMPI) 2017 held in São Carlos, SP - BR; He collaborated in the development of an approach for planning test effort for the company *AMDOCS*. A technical report was produced in collaboration with 29 experts in Software engineering and Operations research.

Tools and Artifacts

2009	Slackware.it Search Plugin
2015	RBAC-BT
2019	FFSM_Diff, Dynamic L*M
2021	MDE Artifacts

Personal Interests

Running, Cycling, Swimming, Hiking, Traveling

Languages

Portuguese (native)

English (TOEFL iBT: 96/120)

Dutch (Attended Social Dutch I-II at Radboud Uni.)

[*CV compiled for the homepage* https://damascenodiego.github.io/]

Nijmegen - The Netherlands, June 22, 2022