

**RAFAEL FERREIRA DA SILVA, Ph.D.**  
*IEEE and ACM Senior Member*

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**APPOINTMENTS**

- 2023–present Oak Ridge National Laboratory, National Center for Computational Sciences, USA  
**Group Leader**, Workflow and Ecosystem Services
- 2021–present **Senior Research Scientist**
- 2023–present Future Generation Computer Systems Journal, Elsevier  
**Special Issues Editor-in-Chief**
- 2022–present Workflows Community Initiative (WCI) – <https://workflows.community>  
**Co-Founder** and **Executive Director**
- 2021–2024 University of Southern California, Department of Computer Science, USA  
**Adjunct Research Assistant Professor**
- 2016–2021 **Research Assistant Professor**
- 2019–2021 University of Southern California, Information Sciences Institute, USA  
**Research Lead**
- 2013–2019 **Computer Scientist**
- 2010–2013 Centre National de la Recherche Scientifique (CNRS), France  
**Software Engineer**

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**EDUCATION**

- 2013 **Doctor of Philosophy in Computer Science**  
Institut National des Sciences Appliquées de Lyon, France  
Thesis Title: “A science-gateway for workflow executions: online and non-clairvoyant self-healing of workflow executions on grids”
- 2010 **Master of Science in Computer Science**  
Federal University of Campina Grande (UFCG), Brazil
- 2007 **Bachelor of Science in Computer Science**  
Federal University of Paraiba (UFPB), Brazil

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**PROFESSIONAL**

**ACTIVITIES**

- Funding Agencies Reviewer
- 2017–2025, U.S. National Science Foundation (NSF), Office of Advanced Cyberinfrastructure (CISE/OAC), In-person and Virtual Review Panels Reviewer.
  - 2021–2024, U.S. Department of Energy (DoE), Advanced Scientific Computing Research (ASCR), Mail In Reviews.
  - 2024, Austrian Science Fund (FWF), Ad-hoc Reviewer.
  - 2020, U.S. Army Research Office (ARO), Ad-hoc Reviewer.
  - 2019, Netherlands Organisation for Scientific Research (NWO), Ad-hoc reviewer.

Chair	<ol style="list-style-type: none"> <li>1. <b>Student Program Chair</b>, 34<sup>th</sup> ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), Conference, Notre Dame, IN, 2025.</li> <li>2. <b>Track Chair</b>: Data Analytics, Visualization, &amp; Storage, IEEE/ACM International Conference for High Performance Computing, Networking, Storage, and Analysis (SC24), Atlanta, GA, USA, 2024.</li> <li>3. <b>Publication Chair</b>, 33<sup>rd</sup> ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), Conference, Pisa, Italy, 2024.</li> <li>4. <b>Program Chair</b>, 19<sup>th</sup> IEEE International Conference on eScience (eScience), Conference, Limassol, Cyprus, 2023.</li> <li>5. <b>Publication Chair</b>, 32<sup>nd</sup> ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), Conference, Orlando, FL, USA, 2023.</li> <li>6. <b>Track Chair</b>: Performance Evaluation, 35<sup>th</sup> IEEE International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), Conference, Porto Alegre, Brazil, 2023.</li> <li>7. <b>Program Chair</b>, 17<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Workshop, Dallas, USA, 2022.</li> <li>8. <b>Co-Program Chair</b>, 2<sup>nd</sup> Workshop on E-science ReseaRch leading tO negative Results (ERROR), Workshop, Salt Lake City, USA, 2022.</li> <li>9. <b>Publicity and Web Chair</b>, 18<sup>th</sup> IEEE International Conference on eScience (eScience), Salt Lake City, USA, 2022.</li> <li>10. <b>Publication Chair</b>, Gateways 2022 Conference, San Diego, USA, 2022.</li> <li>11. <b>Program Chair</b>, 16<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Workshop, Saint Louis, USA, 2021.</li> <li>12. <b>Publicity and Web Chair</b>, 17<sup>th</sup> IEEE International Conference on e-Science (eScience), Conference, Innsbruck, Austria, 2021.</li> <li>13. <b>Program Chair</b>, 15<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Workshop, Atlanta, USA, 2020.</li> <li>14. <b>Program Chair</b>, 14<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Workshop, Denver, USA, 2019.</li> <li>15. <b>Program Chair</b>, Bridging from Concepts to Data and Computation for eScience (BC2DC), Workshop, San Diego, USA, 2019.</li> <li>16. <b>Track Chair</b>, 15<sup>th</sup> International Conference on eScience (eScience), Conference, San Diego, USA, 2019.</li> <li>17. <b>Program Chair</b>, 13<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Workshop, Dallas, USA, 2018.</li> <li>18. <b>Organizer</b>, 2018 National Science Foundation Software Infrastructure for Sustained Innovation Principal Investigators Meeting (NSF SI2 PI Meeting), Washington, USA, 2018.</li> <li>19. <b>Publicity Chair</b>, 12<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Workshop, Denver, USA, 2017.</li> <li>20. <b>Publicity Chair</b>, 11<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Workshop, Salt Lake City, USA, 2016.</li> <li>21. <b>Local Arrangements Chair</b>, 28<sup>th</sup> International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), Conference, Los Angeles, USA, 2016.</li> </ol>
Program Committee Member	<ol style="list-style-type: none"> <li>1. IEEE Cluster, Edinburgh, Scotland, UK, 2025.</li> <li>2. 34<sup>th</sup> ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), Conference, Notre Dame, IN, 2025.</li> <li>3. 2025 IEEE ISC High Performance (ISC-HPC), Workshops and Birds of a Feather, Hamburg, Germany, 2025.</li> </ol>

4. 25<sup>th</sup> IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid), Tromsø, Norway, 2025
5. ACM Platform for Advanced Scientific Computing (PASC), ACM Student Research Competition, Brugg, Switzerland, 2025.
6. 40<sup>th</sup> ACM/SIGAPP Symposium On Applied Computing (SAC), Track On Cloud Continuum, Sicily, Italy, 2025.
7. 20<sup>th</sup> IEEE eScience Conference (eScience), Osaka, Japan, 2024.
8. 33<sup>rd</sup> ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), Conference, Pisa, Italy, 2024.
9. 53<sup>nd</sup> International Conference on Parallel Processing (ICPP), Gotland, Sweden, 2024.
10. 30<sup>th</sup> International European Conference on Parallel and Distributed Computing (Euro-Par), Madrid, Spain, 2024.
11. IEEE/ACM International Conference for High Performance Computing, Networking, Storage, and Analysis (SC23), Workshops, Denver, CO, USA, 2023.
12. IEEE Cluster, Santa Fe, NM, USA, 2023.
13. 52<sup>nd</sup> International Conference on Parallel Processing (ICPP), Salt Lake City, UT, USA, 2023.
14. 29<sup>th</sup> International European Conference on Parallel and Distributed Computing (Euro-Par), Limassol, Cyprus, 2023.
15. 32<sup>nd</sup> ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), Orlando, FL, USA, 2023.
16. 23<sup>rd</sup> IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid), Bangalore, India, 2023.
17. IEEE International Conference on Cloud Computing (CLOUD), Chicago, USA, 2023.
18. 34<sup>th</sup> IEEE International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), Bordeaux, France, 2022.
19. 36<sup>th</sup> IEEE International Parallel & Distributed Processing Symposium (IPDPS), Lyon, France, 2022.
20. 31<sup>st</sup> ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), Minneapolis, USA, 2022.
21. 22<sup>nd</sup> IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid), Taormina, Italy, 2022.
22. ACM Platform for Advanced Scientific Computing (PASC), Basel, Switzerland, 2022.
23. 2<sup>nd</sup> Workshop on Reproducible Workflows, Data Management, and Security (ReWorDS), Salt Lake City, USA, 2022.
24. 35<sup>th</sup> IEEE International Parallel & Distributed Processing Symposium (IPDPS), Portland, USA, 2021.
25. IEEE/ACM International Conference for High Performance Computing, Networking, Storage, and Analysis (SC21), Saint Louis, USA, 2021.
26. 33<sup>rd</sup> IEEE International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), Belo Horizonte, Brazil, 2021.
27. IEEE Cluster, Portland, USA, 2021.
28. 10<sup>th</sup> IEEE/ACM International Workshop on Clouds and (eScience) Applications Management (CloudAM'21), Leicester, UK, 2021.
29. IEEE Workshop on Monitoring and Analysis for HPC Systems Plus Applications (HPCMASPA), Portland, USA, 2021.
30. 1<sup>st</sup> Workshop on Reproducible Workflows, Data Management, and Security (ReWorDS), Innsbruck, Austria, 2021.
31. 1<sup>st</sup> Workshop on High Performance Serverless Computing (HiPS), Stockholm, Sweden, 2021.
32. 9<sup>th</sup> IEEE/ACM International Workshop on Clouds and (eScience) Applications Management (CloudAM'20), Leicester, UK, 2020.
33. 15<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Atlanta, USA, 2020.
34. 40<sup>th</sup> IEEE International Conference on Distributed Computing Systems (ICDCS), Singapore,

- 2020.
35. 31<sup>st</sup> IEEE International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), Campo Grande, Brazil, 2019.
  36. IEEE Cluster, Albuquerque, NM, USA, 2019.
  37. 48<sup>th</sup> International Conference on Parallel Processing (ICPP 2019), Kyoto, Japan, 2019.
  38. 14<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Denver, USA, 2019.
  39. 8<sup>th</sup> International Workshop on Clouds and (eScience) Applications Management (CloudAM'19), Auckland, New Zealand, 2019.
  40. IEEE Cluster, Belfast, UK, 2018.
  41. 30<sup>th</sup> IEEE International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), Lyon, France, 2018.
  42. 13<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Dallas, USA, 2018.
  43. 7<sup>th</sup> IEEE/ACM International Workshop on Clouds and (eScience) Applications Management (CloudAM'18), Zurich, Switzerland, 2018.
  44. 16<sup>th</sup> International Conference on High Performance Computing & Simulation (HPCS), Orléans, France, 2018.
  45. IEEE Cluster, Honolulu, USA, 2017.
  46. 17<sup>th</sup> IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid'17), Madrid, Spain, 2017.
  47. 29<sup>th</sup> IEEE International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), Campinas, Brazil, 2017.
  48. 12<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Denver, USA, 2017.
  49. 6<sup>th</sup> IEEE/ACM International Workshop on Clouds and (eScience) Applications Management (CloudAM'17), Austin, USA, 2017.
  50. 15<sup>th</sup> International Conference on High Performance Computing & Simulation (HPCS), Genoa, Italy, 2017.
  51. 16<sup>th</sup> IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid'16), Cartagena, Colombia, 2016.
  52. 28<sup>th</sup> IEEE International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD), Los Angeles, USA, 2016.
  53. 11<sup>th</sup> Workflows in Support of Large-Scale Science (WORKS), Salt Lake City, USA, 2016.
  54. 5<sup>th</sup> IEEE/ACM International Workshop on Clouds and (eScience) Applications Management (CloudAM'16), Shanghai, China, 2016.
  55. 1<sup>st</sup> International Workshop on Reproducible Open Science (RepScience), Hannover, Germany, 2016.
  56. 15<sup>th</sup> IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid'15), Shenzhen, Guangdong, China, 2015.
  57. 4<sup>th</sup> IEEE/ACM International Workshop on Clouds and (eScience) Applications Management (CloudAM'15), Limassol, Cyprus, 2015.
  58. 3<sup>rd</sup> IEEE/ACM International Workshop on Clouds and (eScience) Applications Management (CloudAM'14), London, UK, 2014.

- Editor
- **2023-present**, Special Issue Editor-in-Chief, Future Generation Computer Systems (IF: 7.5).
  - 2019-2024, Associated Editor, Journal of Parallel and Distributed Computing (IF: 3.8).
  - 2020-2023, Editor, Future Generation Computer Systems (IF: 7.5).
  - 2023, Guest Editor, IEEE Computer Society, Computing in Science & Engineering (IF: 2.1).
  - 2018, Guest Editor, Future Generation Computer Systems (IF: 7.5), Special Issue on Workflows in Support of Large-Scale Science.

Steering Committees **2023-present**, IEEE eScience Conference

Journal Reviewer	<ul style="list-style-type: none"> <li>• IEEE Transactions on Parallel and Distributed Systems, 2014–2022.</li> <li>• IEEE Computer, 2022.</li> <li>• IEEE Transactions on Services Computing, 2022.</li> <li>• PeerJ Computer Science, 2020-2023.</li> <li>• Future Generation Computer Systems, 2013–2021.</li> <li>• IEEE Transactions on Cloud Computing, 2016–2021.</li> <li>• Concurrency and Computation: Practice and Experience, 2013–2019.</li> <li>• ACM Computer Surveys, 2018-2019.</li> <li>• SoftwareX, 2018-2019.</li> <li>• Journal of Grid Computing, 2016–2018.</li> <li>• ACM Transactions on Parallel Computing, 2017–2018.</li> <li>• Computers &amp; Electrical Engineering, 2015–2017.</li> <li>• Journal of Parallel and Distributed Computing, 2015.</li> <li>• Computing and Informatics, 2015.</li> <li>• IEEE Communications Magazine, 2014.</li> <li>• Scientific Programming, 2014.</li> <li>• The Computer Journal, 2014.</li> </ul>
Professional Associations	<ul style="list-style-type: none"> <li>• <b>2023-present</b>, ACM, Senior Member</li> <li>• <b>2022-present</b>, IEEE, Senior Member</li> <li>• 2018-2023, ACM, Member</li> <li>• 2017-2022, IEEE, Member</li> </ul>
<hr/> <b>THESIS COMMITTEE MEMBER</b>	<ul style="list-style-type: none"> <li>• 2025, Alessio Orsino, PhD Thesis, University of Calabria, Italy.</li> <li>• 2024, Aymen Al Saadi, PhD Thesis, Rutgers University, USA.</li> <li>• 2023, Tainã Coleman, PhD Thesis, University of Southern California, USA.</li> </ul>
<hr/> <b>TEACHING ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• USC, Computer Science Department, INF 553 Data Mining (graduate level), Fall 2018.</li> <li>• USC, Computer Science Department, CS 104 Data Structures and Object-Oriented Design (undergraduate level), Spring 2017.</li> </ul>
<hr/> <b>INVITED TALKS (SELECTION)</b>	<ol style="list-style-type: none"> <li>1. Building Next-Generation Scientific Workflows for Autonomous Research Facilities, <i>2025 Multicore World XII</i>, Christchurch, New Zealand, 2025.</li> <li>2. The Evolution of Scientific Workflows, <i>Science and Technology Facilities Council (STFC) at UK Research and Innovation (UKRI)</i>, Virtual, 2024.</li> <li>3. DOE’s Integrated Research Infrastructure (IRI) Program, <i>Low Energy Community Meeting 2024</i>, Knoxville, TN, USA, 2024.</li> <li>4. National Scale Research Workflows and Community Development, <i>ABRF 2024 Annual Meeting, Minneapolis, MN, USA</i>, 2024.</li> <li>5. Modern Scientific Workflows in the Era of an Integrated Research Infrastructure, <i>Monterey Data Conference 2023</i>, Monterey, CA, USA, 2023.</li> <li>6. The Workflows Community Initiative and Recent Summit, <i>U.S. National Science Foundation (NSF) Office of Advanced Cyberinfrastructure (OAC) Brownbag</i>, online event, 2023.</li> <li>7. An Overview of AI Workflows for HPC Systems, <i>Middleware and Grid Interagency Coordination (MAGIC) Meeting</i>, online event, 2023.</li> <li>8. Modern Scientific Workflows: State-of-the-art and Challenges, <i>2023 Computer Science</i></li> </ol>

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*Department Inaugural Lecture*, Fluminense Federal University, Rio de Janeiro, Brazil, 2023.

9. Scientific Workflows: State-of-the-art and Challenges, **Keynote for the Foundations of Workflows for Large-Scale Scientific Data Analysis (FONDA) Retreat**, Berlin, Germany, 2022.
10. Workflows Community Initiative – Bringing the workflows community together: users, developers, researchers, and facilities, *BoF: Software Engineering and Reuse in Modeling, Simulation, and Data Analytics for Science and Engineering*, ISC HPC 2022, Hamburg, Germany, 2022.
11. Building a FAIR Workflows Community: The Dawn of the Workflows Community Initiative, *Data FAIR Working Session: FAIR Workflows - Best practices, services, and tools for helping researchers increase the portability and reproducibility of their work*, AGU 2021, online event, 2021.
12. The Role of Scientific Workflows in Modern Computational Science: State-of-the-art and Challenges, *CS&E colloquium series*, University of Minnesota, Minneapolis, MN, 2021.
13. Towards an Infrastructure for Enabling Systematic Development and Research of Scientific Workflow Systems and Applications, *FONDA – Foundations of Workflows for Large-Scale Scientific Data Analysis*, online event, 2021.
14. FAIR Workflow Traces for Scientific Workflow Research and Development (workflowhub.org), *International FAIR Convergence Symposium, FAIR Workflows Session*, online event, 2020.
15. Computational methods for improving reproducible results in analysis, *EPI Symposium: Toward more rigorous and informative nutritional epidemiology: the rational space between dismissal and defense of the status quo*, Indiana University, online event, 2020.
16. The Interplay of Workflow Execution and Resource Provisioning, *18th SIAM Conference on Parallel Processing for Scientific Computing – Resource Management, Scheduling, Workflows: Critical Middleware for HPC and Clouds*, SIAM PP 18, Tokyo, Japan, 2018.
17. Automating Real-Time Seismic Analysis: Through Streaming and High Throughput Workflows, *Workshop on Environmental Computing Applications – State of the art*, ICCS, San Diego, CA, USA, 2016.
18. Automating Scientific Computations: From the User’s Desktop to Clouds and World-Class Supercomputers, *IRIS Workshop*, Vancouver, WA, USA, 2016.

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**RESEARCH GRANTS**

1. **PI**, Center for Sustaining Workflows and Application Services, DOE, 04/2023-04/2024, \$120,000.
2. **Co-PI**, *ExaWorks: ECP Workflows Project*, DOE, 2017-09/2023, \$3,773,833, grant #17-SC-20-SC.
3. **Co-PI**, *Collaborative Research: OAC Core: Simulation-driven runtime resource management for distributed workflow applications*, NSF, 10/2021-09/2024, \$499,988, grants #2106059, #2106147.
4. **PI**, *Collaborative Research: Elements: Simulation-driven Evaluation of Cyberinfrastructure Systems*, NSF, 08/2021-07/2024, \$600,000, grants #2103489, #2103508.
5. **Co-PI**, *Collaborative Research: EAGER: VisDict - Visual Dictionaries for Enhancing the Communication between Domain Scientists and Scientific Workflow Providers*, NSF, 05/2021-10/2022, \$264,500, grants #2100561, #2100636.
6. **PI**, *Integrating Cyberinfrastructure Literacy into University Curricula*, USC URAP, 08/2021–05/2022, \$4,400.
7. **Co-PI**, *REU Site: SURF-I: Safe, Usable, Resilient and Fair Internet*, NSF, 03/2021-02/2024, \$405,000, grant #2051101.
8. **PI**, *CCRI: Planning: Collaborative Research: Infrastructure for Enabling Systematic Development and Research of Scientific Workflow Management Systems*, NSF, 10/2020-09/2021, \$100,000, grants #2016610, #2016619, and #2016682.
9. **Co-PI**, *Collaborative Research: PPOSS: Planning: Performance Scalability, Trust, and*

*Reproducibility: A Community Roadmap to Robust Science in High-throughput Applications*, NSF, 10/2020-09/2021, \$250,000, grants #2028881, #2028923, #2028930, #2028955, and #2028956.

10. **PI**, *Teaching Parallel and Distributed Computing Concepts in Simulation*, USC URAP, 08/2020-05/2021, \$3,300.
11. **Co-PI**, *Collaborative Research: CyberTraining: Implementation: Small: Integrating core CI literacy and skills into university curricula via simulation-driven activities*, NSF, 10/2019–09/2022, \$500,000, grants #1923539 and #1923621.
12. **PI**, *Integrating core CI literacy and skills into university curricula via simulation-driven activities*, USC URAP, 08/2019-05/2020, \$2,825.
13. **Co-PI**, *Coordinating Curricula and User Preferences to Increase the Participation of Women and Students of Color in Engineering*, NSF, 10/2018–09/2020, \$300,000, grant #1826632.
14. **Co-PI**, *2018 Software Infrastructure for Sustained Innovation (SI2) Principal Investigators Workshop*, NSF, 06/2018–05/2019, \$85,065, grant #1831393.
15. **Co-PI**, *MINT: Model Integration through Knowledge-Rich Data and Process Composition*, DARPA, 12/2017–11/2021, \$12,979,881, grant #W911NF-18-1-0027.
16. **Co-PI**, *BIGDATA: IA: Collaborative Research: In Situ Data Analytics for Next Generation Molecular Dynamics Workflows*, NSF, 10/2017–09/2021, \$1,993,043, grants #1741057, #1740990, and #1741040.
17. **Co-PI**, *Collaborative Research: SI2-SSE: WRENCH: A Simulation Workbench for Scientific Workflow for Users, Developers, and Researchers*, NSF, 01/2017–12/2019, \$497,956, grants #1642369 and #1642335.

#### PEER-REVIEWED PUBLICATIONS

##### Journals

1. [R. Ferreira da Silva](#), R. M. Badia, D. Bard, I. T. Foster, S. Jha, F. Suter, *Frontiers in Scientific Workflows: Pervasive Integration with HPC*, *IEEE Computer*, vol. 57(8), 2024.
2. J. McDonald, J. Dobbs, Y. Ching Wong, [R. Ferreira da Silva](#), H. Casanova, An Exploration of Online-simulation-driven Portfolio Scheduling in Workflow Management Systems, *Future Generation Computer Systems*, vol. 161, p.345–360, 2024.
3. M. Turilli, M. Hategan-Marandiuc, M. Titov, K. Maheshwari, A. Alsaadi, A. Merzky, R. Arambula, M. Zakharchanka, M. Cowan, J. M. Wozniak, A. Wilke, O. O. Kilic, K. Chard, [R. Ferreira da Silva](#), S. Jha, D. Laney, ExaWorks Software Development Kit: A Robust and Scalable Collection of Interoperable Workflows Technologies, *Frontiers in High Performance Computing*, 2024.
4. T. Beck, A. Baroni, R. Bennink, G. Buchs, E. A. Coello Perez, M. Eisenbach, [R. Ferreira da Silva](#), M. Gopalakrishnan Meena, K. Gottiparthi, P. Groszkowski, T. S. Humble, R. Landfield, K. Maheshwari, S. Oral, M. A. Sandoval, A. Shehata, I.-S. Suh, C. Zimmer, Integrating Quantum Computing Resources into Scientific HPC Ecosystems. *Future Generation Computer Systems*, vol 161, p.11–25, 2024. **(FGCS Fall 2024 Editor's Choice Papers)**
5. T. Coleman, H. Casanova, [R. Ferreira da Silva](#), Automated Generation of Scientific Workflow Generators with WfChef, *Future Generation Computer Systems*, vol 147, p.16-29, 2023.
6. T. Coleman, H. Casanova, L. Pottier, M. Kaushik, E. Deelman, [R. Ferreira da Silva](#), WfCommons: A Framework for Enabling Scientific Workflow Research and Development, *Future Generation Computer Systems*, vol. 128, p.16-27, 2022.
7. T. M. A. Do, L. Pottier, [R. Ferreira da Silva](#), S. Caíno-Lores, M. Taufer, E. Deelman, Performance assessment of ensembles of in situ workflows under resource constraints, *Concurrency and Computation: Practice and Experience*, 2022.
8. A. W. Brown, S. Aslibekyan, D. Bier, [R. Ferreira da Silva](#), A. Hoover, D.M. Klurfeld, E. Loken, E. Mayo-Wilson, N. Menachemi, G. D. Pavela, P. Quinn, D. Schoeller, T. Carmen, V. Danny, C. J. Vorland, L. D. Whigham, D. B. Allison, Toward more rigorous and informative nutritional epidemiology: The rational space between dismissal and defense of the status quo, *Critical*

- Reviews in Food Science and Nutrition*, p.1–18, 2021.
9. Y. Gil, D. Garijo, D. Khider, C. A. Knoblock, V. Ratnakar, M. Osorio, H. Vargas, M. Pham, J. Pujara, B. Shbita, B. Vu, Y. Chiang, D. Feldman, Y. Lin, H. Song, V. Kumar, A. Khandelwal, M. Steinbach, K. Tayal, S. Xu, S. A. Pierce, L. Pearson, D. Hardesty-Lewis, E. Deelman, R. Ferreira da Silva, R. Mayani, A. R. Kemanian, Y. Shi, L. Leonard, S. Peckham, M. Stoica, K. Cobourn, Z. Zhang, C. Duffy, L. Shu, Artificial Intelligence for Modeling Complex Systems: Taming the Complexity of Expert Models to Improve Decision Making, *ACM Transactions on Interactive Intelligent Systems*, vol. 11, iss. 2, p.1-49, 2021.
  10. H. Casanova, R. Tanaka, W. Koch, R. Ferreira da Silva, Teaching Parallel and Distributed Computing Concepts in Simulation with WRENCH, *Journal of Parallel and Distributed Computing*, vol. 156, p.53-63, 2021.
  11. T. M. A. Do, L. Pottier, S. Caíno-Lores, R. Ferreira da Silva, M. A. Cuendet, H. Weinstein, T. Estrada, M. Taufer, and E. Deelman, A Lightweight Method for Evaluating In Situ Workflow Efficiency, *Journal of Computational Science*, 2020.
  12. G. Papadimitriou, C. Wang, K. Vahi, R. Ferreira da Silva, A. Mandal, L. Zhengchun, R. Mayani, M. Rynge, M. Kiran, V. E. Lynch, R. Kettimuthu, E. Deelman, J. S. Vetter, and I. Foster, End-to-End Online Performance Data Capture and Analysis for Scientific Workflows, *Future Generation Computer Systems*, 2020. **(FGCS 2021 Best Paper Award)**
  13. R. Ferreira da Silva, H. Casanova, A. Orgerie, R. Tanaka, E. Deelman, and F. Suter, Characterizing, Modeling, and Accurately Simulating Power and Energy Consumption of I/O-intensive Scientific Workflows, *Journal of Computational Science*, vol. 44, 2020.
  14. E. Deelman, R. Ferreira da Silva, K. Vahi, M. Rynge, R. Mayani, R. Tanaka, W. Whitcup, and M. Livny, “The Pegasus Workflow Management System: Translational Computer Science in Practice,” *Journal of Computational Science*, 2020.
  15. H. Casanova, R. Ferreira da Silva, R. Tanaka, S. Pandey, G. Jethwani, W. Koch, S. Albrecht, J. Oeth, and F. Suter, Developing Accurate and Scalable Simulators of Production Workflow Management Systems with WRENCH, *Future Generation Computer Systems*, vol. 112, p. 162-175, 2020.
  16. R. Ferreira da Silva, S. Callaghan, T. M. A. Do, G. Papadimitriou, and E. Deelman, Measuring the Impact of Burst Buffers on Data-Intensive Scientific Workflows, *Future Generation Computer Systems*, vol. 101, p. 208–220, 2019.
  17. E. Deelman, K. Vahi, M. Rynge, R. Mayani, R. Ferreira da Silva, G. Papadimitriou, and M. Livny, The Evolution of the Pegasus Workflow Management Software, *Computing in Science Engineering*, vol. 21, iss. 4, p. 22–36, 2019.
  18. R. Ferreira da Silva, R. Filgueira, E. Deelman, E. Pairo-Castineira, I. M. Overton, and M. Atkinson, Using Simple PID-inspired Controllers for Online Resilient Resource Management of Distributed Scientific Workflows, *Future Generation Computer Systems*, vol. 95, pp.615-628, 2019.
  19. A. Brinckman, E. Deelman, S. Gupta, J. Nabrzyski, S. Park, R. Ferreira da Silva, I. J. Taylor, and K. Vahi, Collaborative Circuit Designs using the CRAFT Repository, *Future Generation Computer Systems*, vol. 94, pp.841-853, 2019.
  20. T. Glatard, G. Kiar, T. Aumentado-Armstrong, N. Beck, P. Bellec, R. Bernard, A. Bonnet, S. T. Brown, S. Camarasu-Pop, F. Cervenansky, S. Das, R. Ferreira da Silva, G. Flandin, P. Girard, and others, Boutiques: a flexible framework to integrate command-line applications in computing platforms, *GigaScience*, 2018.
  21. B. Tovar, R. Ferreira da Silva, G. Juve, E. Deelman, W. Allcock, D. Thain, and M. Livny, A Job Sizing Strategy for High-Throughput Scientific Workflows, *IEEE Transactions on Parallel and Distributed Systems*, vol. 29, iss. 2, pp. 240-253, 2018.
  22. R. Ferreira da Silva, R. Filgueira, I. Pietri, M. Jiang, R. Sakellariou, and E. Deelman, A Characterization of Workflow Management Systems for Extreme-Scale Applications, *Future Generation Computer Systems*, vol. 75, pp. 228-238, 2017.
  23. T. Glatard, M. Rousseau, S. Camarasu-Pop, R. Adalat, N. Beck, S. Das, R. Ferreira da Silva, N. Khalili-Mahani, V. Korkhov, P. Quirion, P. Rioux, S. D. Olabbarriaga, P. Bellec, and A. C. Evans,



Software architectures to integrate workflow engines in science gateways, *Future Generation Computer Systems*, vol. 75, pp. 239-255, 2017.

24. I. Santana-Perez, R. Ferreira da Silva, M. Rynge, E. Deelman, M. S. Pérez-Hernández, and O. Corcho, Reproducibility of execution environments in computational science using semantics and clouds, *Future Generation Computer Systems*, vol. 67, pp.354-367, 2017.
25. E. Deelman, C. Carothers, A. Mandal, B. Tierney, J. S. Vetter, I. Baldin, C. Castillo, G. Juve, D. Krol, V. Lynch, B. Mayer, J. Meredith, T. Proffen, P. Ruth, and R. Ferreira da Silva, PANORAMA: An Approach to Performance Modeling and Diagnosis of Extreme Scale Workflows, *International Journal of High Performance Computing Applications*, vol. 31, iss. 1, pp. 4-18, 2017.
26. E. Deelman, K. Vahi, M. Rynge, G. Juve, R. Mayani, and R. Ferreira da Silva, Pegasus in the Cloud: Science Automation through Workflow Technologies, *IEEE Internet Computing*, 20(1), pp. 70-76, 2016.
27. R. Ferreira da Silva, G. Juve, M. Rynge, E. Deelman, and M. Livny, Online Task Resource Consumption Prediction for Scientific Workflows, *Parallel Processing Letters*, 25(3), 2015.
28. W. Chen, R. Ferreira da Silva, E. Deelman, and R. Sakellariou, Using imbalance metrics to optimize task clustering in scientific workflow executions, *Future Generation Computer Systems*, vol. 46, pp. 69-84, 2015.
29. E. Deelman, K. Vahi, G. Juve, M. Rynge, S. Callaghan, P. J. Maechling, R. Mayani, W. Chen, R. Ferreira da Silva, M. Livny, and K. Wenger, Pegasus, a workflow management system for science automation, *Future Generation Computer Systems*, vol. 46, pp. 17-35, 2015.
30. T. Glatard, L. B. Lewis, R. Ferreira da Silva, R. Adalat, N. Beck, C. Lepage, P. Rioux, M. Rousseau, T. Sherif, E. Deelman, N. Khalili-Mahani, and A. C. Evans, Reproducibility of neuroimaging analyses across operating systems, *Frontiers in Neuroinformatics*, 9(12), 2015.
31. J. Howison, E. Deelman, M. J. McLennan, R. Ferreira da Silva, and J. D. Herbsleb, Understanding the scientific software ecosystem and its impact: Current and future measures, *Research Evaluation*, 2015.
32. W. Chen, R. Ferreira da Silva, E. Deelman, and T. Fahringer, Dynamic and fault-tolerant clustering for scientific workflows, *IEEE Transactions on Cloud Computing*, 2015.
33. T. Glatard, L. B. Lewis, R. Ferreira da Silva, R. Adalat, N. Beck, C. Lepage, P. Rioux, M. Rousseau, T. Sherif, E. Deelman, N. Khalili-Mahani, and A. C. Evans, Reproducibility of neuroimaging analyses across operating systems, *Frontiers in Neuroinformatics*, 9(12), 2015.
34. R. Ferreira da Silva, T. Glatard, and F. Desprez, Controlling fairness and task granularity in distributed, online, non-clairvoyant workflow executions, *Concurrency and Computation: Practice and Experience*, 26(14), pp. 2347-2366, 2014.
35. R. Ferreira da Silva, T. Glatard, and F. Desprez, Self-healing of workflow activity incidents on distributed computing infrastructures, *Future Generation Computer Systems*, 29(8), pp. 2284-2294, 2013.
36. T. Glatard, C. Lartzien, B. Gibaud, R. Ferreira da Silva, G. Forestier, F. Cervenansky, M. Alessandrini, H. Benoit-Cattin, O. Bernard, S. Camarasu-Pop, N. Cerezo, P. Clarysse, A. Gaignard, P. Hugonnard, H. Liebgott, S. Marache, A. Marion, J. Montagnat, J. Tabary, and D. Friboulet, A virtual imaging platform for multi-modality medical image simulation, *IEEE Transactions on Medical Imaging*, 32(1), pp. 110-118, 2013.
37. S. Camarasu-Pop, T. Glatard, R. Ferreira da Silva, P. Gueth, D. Sarrut, and H. Benoit-Cattin, Monte carlo simulation on heterogeneous distributed systems: a computing framework with parallel merging and checkpointing strategies, *Future Generation Computer Systems*, 29(3), pp. 728-738, 2013.
38. F. Brasileiro, M. Gaudencio, R. Ferreira da Silva, A. Duarte, D. Carvalho, D. Scardaci, L. Ciuffo, R. Mayo, H. Hoeger, M. Stanton, R. Ramos, R. Barbera, B. Marechal, and P. Gavillet, Using a simple prioritisation mechanism to effectively interoperate service and opportunistic grids in the eela-2 e-infrastructure, *Journal of Grid Computing*, vol. 9, pp. 241-257, 2011.

Conference /  
Workshop  
Papers

1. A. A. Da Silva, R. P. Hong Enriquez, G. Rattihalli, V. Thurimella, R. Ferreira da Silva, D. Milojevic, *Enabling HPC Scientific Workflows for Serverless*, 6th International Workshop on Containers and New Orchestration Paradigms for Isolated Environments in HPC (CANOPIE-HPC), 2024.
2. S. E. Hahn, P. W. Fackler, W. F. Godoy, K. Maheshwari, Z. Morgan, A. T. Savici, C. M. Hoffmann, P. Valero-Lara, J. S. Vetter, R. Ferreira da Silva, *Integrating ORNL's HPC and Neutron Facilities with a Performance-Portable CPU/GPU Ecosystem*, 2024 6th Annual Workshop on Extreme-Scale Experiment-in-the-Loop Computing (XLOOP), 2024. **(Best Paper Award)**
3. T. Kurihana, T. J. Skluzacek, R. Ferreira da Silva, V. Anantharaj, *Scalable Multi-Facility Workflows for Artificial Intelligence Applications in Climate Research*, 2024 6th Annual Workshop on Extreme-Scale Experiment-in-the-Loop Computing (XLOOP), 2024.
4. K. Maheshwari, W. Arndt, A. M. Karimi, J. Yin, F. Suter, S. Johnson, R. Ferreira da Silva, *Enabling Low-Overhead HT-HPC Workflows at Extreme Scale using GNU Parallel*, 2024 IEEE/ACM Workshop on Workflows in Support of Large-Scale Science (WORKS), 2024.
5. W. Shin, J. B. White, W. Elwasif, R. Ferreira da Silva, C. Zimmer, B. Messer, R. Budiardja, A. Georgiadou, V. M. Vergara, J. Lange, M. Maiterth, T. Osborne, L. Huk, J. Holmen, N. Hagerty, A. M. Karimi, T. Naughton, R. Adamson, R. Prout, S. Oral, *Towards Sustainable Post-Exascale Leadership Computing. 2024*, IEEE/ACM Workshop on Sustainable Supercomputing (SusSupSC), 2024.
6. T. J. Skluzacek, R. Souza, M. Coletti, F. Suter, R. Ferreira da Silva, *Towards Cross-Facility Workflows Orchestration through Distributed Automation*, PEARC '24: Practice and Experience in Advanced Research Computing 2024: Human Powered Computing, 2024.
7. R. Souza, S. Caino-Lores, M. Coletti, T. J. Skluzacek, A. Costan, F. Suter, M. Mattoso, R. Ferreira da Silva, *Workflow Provenance in the Computing Continuum for Responsible, Trustworthy, and Energy-Efficient AI*, 2024 IEEE 20th International Conference on e-Science (e-Science), 2024.
8. W. F. Godoy, P. Valero-Lara, C. Anderson, K. W. Lee, A. Gainaru, R. Ferreira da Silva, J. S. Vetter, *Julia as a unifying end-to-end workflow language on the Frontier exascale system*, 2023 IEEE/ACM Workshop on Workflows in Support of Large-Scale Science (WORKS), 2023. **(Best Paper Award)**
9. S. Gesing, J. Ma, H. Neeman, L. Christopherson, D. Colbry, M. Dougherty, J. Griffioen, S. Tussy, A. Crall, J. Goodhue, R. Ferreira da Silva, K. Chard, M. Brazil, T. Cheatham, *Community of Communities: A Working Group Enhancing Interactions Between Organizations and Projects Supporting RC Professionals*. Gateways 2023, 2023.
10. F. Suter, R. Ferreira da Silva, A. Gainaru, S. Klasky, *Driving Next-Generation Workflows from the Data Plane*, 19th IEEE Conference on eScience (eScience 23), 2023. **(Best Paper Candidate, AR: 48%)**
11. R. Souza, T. J. Skluzacek, S.R. Wilkinson, M. Ziatdinov, R. Ferreira da Silva, *Towards Lightweight Data Integration using Multi-workflow Provenance and Data Observability*, 19th IEEE Conference on eScience (eScience 23), 2023. **(AR: 48%)**
12. M. Hategan-Marandiu, A. Merzky, N. Collier, K. Maheshwari, J. Ozik, M. Turilli, A. Wilke, J. M. Wozniak, K. Chard, I. Foster, R. Ferreira da Silva, S. Jha, D. Laney, *PSI/J: A Portable Interface for Submitting, Monitoring, and Managing Jobs*, 19th IEEE Conference on eScience (eScience 23), 2023. **(AR: 48%)**
13. H. Casanova, K. Berney, S. Chastel, R. Ferreira da Silva, *WfCommons: Data Collection and Runtime Experiments using Multiple Workflow Systems*, The 1st IEEE International Workshop on Workflows in Distributed Environments (WiDE 2023), 2023.
14. H. Casanova, Y. C. Wong, L. Pottier, R. Ferreira da Silva, *On the Feasibility of Simulation-driven Portfolio Scheduling for Cyberinfrastructure Runtime Systems*, Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), 2023.
15. T. Coleman, H. Casanova, K. Maheshwari, L. Pottier, S. R. Wilkinson, J. Wozniak, F. Suter, M. Shankar, R. Ferreira da Silva, *WfBench: Automated Generation of Scientific Workflow*

- Benchmarks*, 13th IEEE International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer Systems (PMBS), 2022.
16. T. M. A. Do, L. Pottier, R. Ferreira da Silva, F. Suter, S. Caino-Lores, M. Taufer, E. Deelman, *Co-scheduling Ensembles of In Situ Workflows*, 2022 IEEE Workshop on Workflows in Support of Large-Scale Science (WORKS), 2022.
  17. V. Honore, T. M. A. Do, L. Pottier, R. Ferreira da Silva, E. Deelman, F. Suter, *Sim-Situ: A Framework for the Faithful Simulation of in situ Processing*, 18th IEEE International Conference on ESience (EScience), 2022.
  18. H. Casanova, Y.C. Wong, L. Pottier, R. Ferreira da Silva, *On the Feasibility of Simulation-driven Portfolio Scheduling for Cyberinfrastructure Runtime Systems*, Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), 2022.
  19. S. Wilkinson, K. Maheshwari, R. Ferreira da Silva, *Unveiling User Behavior on Summit Login Nodes as a User*, International Conference on Computational Science (ICCS), 2022. **(AR: 33%)**
  20. K. Maheshwari, S. R. Wilkinson, A. May, T. Skluzacek, O. A. Kuchar, R. Ferreira da Silva, *Pseudonymization at Scale: OLCF's Summit Usage Data Case Study*, 2022 IEEE International Conference on Big Data (Big Data), 2022.
  21. I. Abhinit, E. K. Adams, K. Alam, B. Chase, E. Deelman, L. Gorenstein, S. Hudson, T. Islam, J. Larson, G. Lentner, A. Mandal, J-L. Navarro, B. Nicolae, L. Pouchard, R. Ross, B. Roy, M. Rynge, A. Serebrenik, K. Vahi, S. Wild, Y. Xin, R. Ferreira da Silva, R. Filgueira, *Novel Proposals for FAIR, Automated, Recommendable, and Robust Workflows*, 2022 IEEE/ACM Workshop on Workflows in Support of Large-Scale Science (WORKS), 2022, p.84–92.
  22. H. M. Bücker, H. Casanova, R. Ferreira da Silva, A. Lasserre, D. Luyen, R. Namyst, J. Schoder, P-A. Wacrenier, D. P. Bunde, *Peachy Parallel Assignments (EduPar 2022)*, 12th NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar), 2022.
  23. R. Ferreira da Silva, H. Casanova, K. Chard, I. Altintas, R. M. Badia, B. Balis, T. Coleman, F. Coppens, F. Di Natale, B. Enders, T. Fahringer, R. Filgueira, G. Fursin, D. Garijo, C. Goble, D. Howell, S. Jha, D. S. Katz, D. Laney, U. Leser, M. Malawski,, K. Mehta, L. Pottier, J. Ozik, J. L. Peterson, L. Ramakrishnan, S. Soiland-Reyes, D. Thain, M. Wolf, *A Community Roadmap for Scientific Workflows Research and Development*, 2021 IEEE Workshop on Workflows in Support of Large-Scale Science (WORKS), 2021, p.81–90.
  24. K. Burkat, M. Pawlik, B. Balis, M. Malawski, K. Vahi, M. Rynge, R. Ferreira da Silva, E. Deelman, *Serverless Containers – Rising Viable Approach to Scientific Workflows*, 17th IEEE ESience Conference, 2021, p.40–49. **(AR: 42%)**
  25. H-D. Do, V. Hayot-Sasson, R. Ferreira da Silva, C. Steele, H. Casanova, T. Glatard, *Modeling the Linux page cache for accurate simulation of data-intensive applications*, in IEEE Cluster, 2021, p.398-408. **(AR: 29.3%)**
  26. T. Coleman, H. Casanova, R. Ferreira da Silva, *WfChef: Automated Generation of Accurate Scientific Workflow Generators*, in 17th eScience Conference, 2021, p.159-168. **(AR: 42%)**
  27. T. Coleman, H. Casanova, T. Gwartney, R. Ferreira da Silva, *Evaluating energy-aware scheduling algorithms for I/O-intensive scientific workflows*, International Conference on Computational Science (ICCS), 2021. **(AR: 30.7%)**
  28. E. Hataishi, P.-F. Dutot, R. Ferreira da Silva, H. Casanova, *GLUME: A Strategy for Reducing Workflow Execution Times on Batch-Scheduled Platforms*, Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP), 2021, p.210-230.
  29. T. M. A. Do, L. Pottier, R. Ferreira da Silva, S. Caíno-Lores, M. Taufer, E. Deelman, *Assessing Resource Provisioning and Allocation of Ensembles of In Situ Workflows*, in 14th International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2), 2021.
  30. R. Ferreira da Silva, L. Pottier, T. Coleman, E. Deelman, and H. Casanova, *WorkflowHub: Community Framework for Enabling Scientific Workflow Research and Development*, in 2020 IEEE/ACM Workflows in Support of Large-Scale Science (WORKS), 2020, p. 49–56.
  31. H. Casanova, R. Ferreira da Silva, A. Gonzalez-Escribano, W. Koch, Y. Torres, and D. P.

- Bunde, *Peachy Parallel Assignments (EduHPC 2020)*, in 2020 IEEE/ACM Workshop on Education for High-Performance Computing (EduHPC), 2020, p. 53–58.
32. J. C. Adams, G. Back, P. Bala, M. K. Bane, K. Cameron, H. Casanova, M. Ellis, R. Ferreira da Silva, G. Jethwani, W. Koch, T. Lee, and T. Zhu, *Lightning Talks of EduHPC 2020*, in Lightning Talks of EduHPC 2020, 2020, p. 59–64.
  33. L. Pottier, R. Ferreira da Silva, H. Casanova, and E. Deelman, *Modeling the Performance of Scientific Workflow Executions on HPC Platforms with Burst Buffers*, in IEEE Cluster, 2020. **(AR: 20.4%)**
  34. T. M. A. Do, L. Pottier, S. Thomas, R. Ferreira da Silva, M. A. Cuendet, H. Weinstein, T. Estrada, M. Taufer, and E. Deelman, *A Novel Metric to Evaluate In Situ Workflows*, in International Conference on Computational Science (ICCS), 2020. **(AR: 43.9%)**
  35. R. Mitchell, L. Pottier, S. Jacobs, R. Ferreira da Silva, M. Rynge, K. Vahi, and E. Deelman, *Exploration of Workflow Management Systems Emerging Features from Users Perspectives*, in First International Workshop on Big Data Tools, Methods, and Use Cases for Innovative Scientific Discovery (BTSD), 2019.
  36. R. Ferreira da Silva, R. Mayani, Y. Shi, A. R. Kemanian, M. Rynge, and E. Deelman, *Empowering Agroecosystem Modeling with HTC Scientific Workflows: The Cycles Model Use Case*, in First International Workshop on Big Data Tools, Methods, and Use Cases for Innovative Scientific Discovery (BTSD), 2019.
  37. R. Tanaka, H. Casanova, and R. Ferreira da Silva, *Teaching Parallel and Distributed Computing Concepts in Simulation with WRENCH*, in Workshop on Education for High-Performance Computing (EduHPC), 2019.
  38. R. Ferreira da Silva, H. Casanova, R. Tanaka, F. Suter, *Bridging Concepts and Practice in eScience via Simulation-driven Engineering*, in Workshop on Bridging from Concepts to Data and Computation for eScience (BC2DC'19), 2019.
  39. R. Ferreira da Silva, A. Orgerie, H. Casanova, R. Tanaka, E. Deelman, and F. Suter, *Accurately Simulating Energy Consumption of I/O-intensive Scientific Workflows*, in 2019 International Conference on Computational Science (ICCS), 2019. **(AR: 28.5%)**
  40. K. Vahi, M. Rynge, G. Papadimitriou, D. Brown, R. Mayani, R. Ferreira da Silva, E. Deelman, A. Mandal, E. Lyons, and M. Zink, *Custom Execution Environments with Containers in Pegasus-enabled Scientific Workflows*, in 15th eScience Conference, 2019.
  41. S. Thomas, M. Wyatt, T. M. A. Do, L. Pottier, R. Ferreira da Silva, H. Weinstein, M. A. Cuendet, T. Estrada, E. Deelman, and M. Taufer, *Characterization of In Situ and In Transit Analytics of Molecular Dynamics Simulations for Next-generation Supercomputers*, in 15th eScience Conference, 2019.
  42. S. Bogol, P. Brenner, A. Brinckman, E. Deelman, R. Ferreira da Silva, S. Gupta, J. Nabrzyski, S. Park, D. Perez, M. Rynge, I. Taylor, K. Vahi, M. V. Werf, R. Sarah, and S. Wyngaard, *A Secure Gateway for Enabling ASIC Design Collaborations*, in 11th International Workshop on Science Gateways (IWSG 2019), 2019.
  43. S. Herbein, D. Domyancic, P. Minner, I. Laguna, R. Ferreira da Silva, and D. H. Ahn, *MCEM: Multi-Level Cooperative Exception Model for HPC Workflows*, in 9th International Workshop on Runtime and Operating Systems for Supercomputers (ROSS 2019), 2019.
  44. D. Garijo, D. Khider, V. Ratnakar, Y. Gil, E. Deelman, R. Ferreira da Silva, C. Knoblock, Y. Chiang, M. Pham, J. Pujara, B. Vu, D. Feldman, R. Mayani, K. Cobourn, C. Duffy, A. Kemanian, L. Shu, V. Kumar, A. Khandelwal, K. Tayal, S. Peckham, M. Stoica, A. Dabrowski, D. Hardesty-Lewis, and S. Pierce, *An Intelligent Interface for Integrating Climate, Hydrology, Agriculture, and Socioeconomic Models*, in ACM 24th International Conference on Intelligent User Interfaces (IUI'19), 2019, p. 111–112. **(AR: 25.0%)**
  45. H. Casanova, S. Pandey, J. Oeth, R. Tanaka, F. Suter, and R. Ferreira da Silva, *WRENCH: Workflow Management System Simulation Workbench*, in 13th Workshop on Workflows in Support of Large-Scale Science (WORKS'18), 2018.
  46. R. Ferreira da Silva, D. Garijo, S. Peckham, Y. Gil, E. Deelman, and V. Ratnakar, *Towards Model Integration via Abductive Workflow Composition and Multi-Method Scalable Model*

- Execution*, in 9th International Congress on Environmental Modelling and Software, 2018.
47. Y. Gil, K. Cobourn, E. Deelman, C. Duffy, R. Ferreira da Silva, A. Kemanian, C. Knoblock, V. Kumar, S. Peckham, L. Carvalho, Y. Chiang, D. Garijo, D. Khider, A. Khandelwal, M. Pahm, J. Pujara, V. Ratnakar, M. Stoica, and B. Vu, *MINT: Model Integration Through Knowledge-Powered Data and Process Composition*, in 9th International Congress on Environmental Modelling and Software, 2018.
  48. R. Filgueira, R. Ferreira da Silva, E. Deelman, V. Christodoulou, and A. Krause, *IoT-Hub: New IoT data-platform for Virtual Research Environments*, in 10th International Workshop on Science Gateways (IWSG 2018), 2018.
  49. R. Ferreira da Silva, S. Callaghan, and E. Deelman, *On the Use of Burst Buffers for Accelerating Data-Intensive Scientific Workflows*, in 12th Workshop on Workflows in Support of Large-Scale Science (WORKS'17), 2017.
  50. A. Mandal, P. Ruth, I. Baldin, R. Ferreira da Silva, and E. Deelman, *Toward Prioritization of Data Flows for Scientific Workflows Using Virtual Software Defined Exchanges*, in First International Workshop on Workflow Science (WoWS 2017), 2017.
  51. V. Lynch, J. B. Calvo, E. Deelman, R. Ferreira da Silva, M. Goswami, Y. Hui, E. Lingerfelt, and J. Vetter, *Distributed Workflows for Modeling Experimental Data*, in 2017 IEEE High Performance Extreme Computing Conference (HPEC), 2017.
  52. I. J. Taylor, A. Brinckman, E. Deelman, R. Ferreira da Silva, S. Gupta, J. Nabrzyski, S. Park, and K. Vahi, *Accelerating Circuit Realization via a Collaborative Gateway of Innovations*, in 9th International Workshop on Science Gateways (IWSG 2017), 2017.
  53. R. Ferreira da Silva, R. Filgueira, E. Deelman, E. Pairo-Castineira, I. M. Overton, and M. Atkinson, *Using Simple PID Controllers to Prevent and Mitigate Faults in Scientific Workflows*, in 11th Workflows in Support of Large-Scale Science (WORKS), 2016.
  54. R. Filgueira, R. Ferreira da Silva, A. Krause, E. Deelman, and M. Atkinson, *Asterism: Pegasus and dispel4py hybrid workflows for data-intensive science*, in 7th International Workshop on Data-Intensive Computing in the Clouds (DataCloud), 2016, pp. 1-8.
  55. D. Krol, R. Ferreira da Silva, E. Deelman, and V. E. Lynch, *Workflow Performance Profiles: Development and Analysis*, in Euro-Par 2014: Parallel Processing Workshops, 2016.
  56. R. Ferreira da Silva, E. Deelman, R. Filgueira, K. Vahi, M. Rynge, R. Mayani, and B. Mayer, *Automating Environmental Computing Applications with Scientific Workflows*, in Environmental Computing Workshop (ECW), 2016.
  57. D. Krol, R. Ferreira da Silva, E. Deelman, and V. E. Lynch, *Science Automation in Practice: Performance Data Farming in Workflows*, in Euro-Par 2014: Parallel Processing Workshops, 2016.
  58. S. Schlagkamp, R. Ferreira da Silva, W. Allcock, E. Deelman, and U. Schwiegelshohn, *Consecutive Job Submission Behavior at Mira Supercomputer*, in 25th ACM International Symposium on High-Performance Parallel and Distributed Computing (HPDC), 2016. **(AR: 16.0%)**
  59. S. Schlagkamp, R. Ferreira da Silva, E. Deelman and U. Schwiegelshohn, *Understanding User Behavior: from HPC to HTC*, in International Conference on Computational Science (ICCS), 2016. **(AR: 31.0%)**
  60. S. Schlagkamp, R. Ferreira da Silva, J. Renker, and G. Rinkenauer, *Analyzing Users in Parallel Computing: A User-Oriented Study*, in 14th International Conference on High Performance Computing & Simulation (HPCS), 2016.
  61. S. Schlagkamp, M. Hofmann, L. Eufinger, and R. Ferreira da Silva, *Increasing Waiting Time Satisfaction in Parallel Job Scheduling via a Flexible MILP Approach*, in 14th International Conference on High Performance Computing & Simulation (HPCS), 2016.
  62. H. Nawaz, G. Juve, R. Ferreira da Silva, and E. Deelman, *Performance Analysis of an I/O-Intensive Workflow executing on Google Cloud and Amazon Web Services*, in 18th Workshop on Advances in Parallel and Distributed Computational Models (APDCM), 2016.
  63. A. Mandal, P. Ruth, I. Baldin, D. Krol, G. Juve, R. Mayani, R. Ferreira da Silva, E. Deelman, J. Meredith, J. Vetter, V. Lynch, B. Mayer, J. Wynne III, M. Blanco, C. Carothers, J. LaPre, and B.

- Tierney, *Toward and End-to-end Framework for Modeling, Monitoring, and Anomaly Detection for Scientific Workflows*, in Workshop on Large-Scale Parallel Processing (LSP), 2016.
64. R. Ferreira da Silva, M. Rynge, G. Juve, I. Sfiligoi, E. Deelman, J. Letts, F. Würthwein, and M. Livny, *Characterizing a high throughput computing workload: the compact muon solenoid (CMS) experiment at LHC*, in 2015 International Conference on Computational Science (ICCS), 2015. **(AR: 33.0%)**
  65. G. Juve, B. Tovar, R. Ferreira da Silva, D. Krol, D. Thain, E. Deelman, W. Allcock, and M. Livny, *Practical Resource Monitoring for Robust High Throughput Computing*, Workshop on Monitoring and Analysis for High Performance Computing Systems Plus Applications (HPCMASPA), 2015.
  66. T. Glatard, R. Ferreira da Silva, N. Boujelben, R. Adalat, N. Beck, P. Rioux, M. Rousseau, E. Deelman, and A. C. Evans, *Boutiques: an application-sharing system based on Linux containers*, Neuroinformatics 2015, 2015.
  67. R. Oda, D. Cordeiro, R. Ferreira da Silva, E. Deelman, and K. Braghetto, *The case for resource sharing in scientific workflow executions*, in XVI Simposio em Sistemas Computacionais de Alto Desempenho (WSCAD), 2015.
  68. R. Ferreira da Silva, W. Chen, G. Juve, K. Vahi, and E. Deelman, *Community resources for enabling and evaluating research on scientific workflows*, in 10th IEEE International Conference on eScience, 2014, pp. 177-184. **(AR: 37.6%)**
  69. R. Ferreira da Silva, T. Fahringer, J. J. Durillo, and E. Deelman, *A unified approach for modeling and optimization of energy, makespan and reliability for scientific workflows on large-scale computing infrastructures*, in Workshop on modeling & simulation of systems and applications (MODSIM), 2014.
  70. T. Glatard, L. B. Lewis, R. Ferreira da Silva, M. Rousseau, C. Lepage, P. Rioux, N. Mahani, E. Deelman, and A. C. Evans, *Extending provenance information in cbrain to address reproducibility issues across computing platforms*, Frontiers in Neuroinformatics, iss. 76, 2014.
  71. I. Santana-Perez, R. Ferreira da Silva, M. Rynge, E. Deelman, M. S. Pérez-Hernández, and O. Corcho, *A semantic-based approach to attain reproducibility of computational environments in scientific workflows: a case study*, in Euro-par 2014: parallel processing workshops, 2014, vol. 8805, pp. 452-463.
  72. S. Srinivasan, G. Juve, R. Ferreira da Silva, K. Vahi, and E. Deelman, *A cleanup algorithm for implementing storage constraints in scientific workflow executions*, in 9th workshop on workflows in support of large-scale science (WORKS), 2014, pp. 41-49.
  73. S. Azarnoosh, M. Rynge, G. Juve, E. Deelman, M. Niec, M. Malawski, and R. Ferreira da Silva, *Introducing Precip: an API for managing repeatable experiments in the cloud*, in 2013 IEEE 5th international conference on cloud computing technology and science (CloudCom 2013), 2013, pp. 19-26. **(AR: 17.8%)**
  74. W. Chen, R. Ferreira da Silva, E. Deelman, and R. Sakellariou, *Balanced task clustering in scientific workflows*, in 2013 IEEE 9th International Conference on eScience, 2013, pp. 188-195. **(AR: 41.8%)**
  75. R. Ferreira da Silva and T. Glatard, *A science-gateway workload archive to study pilot jobs, user activity, bag of tasks, task sub-steps, and workflow executions*, in Euro-par 2012: parallel processing workshops, 2013, vol. 7640, pp. 79-88. **(AR: 26.8%)**
  76. R. Ferreira da Silva, T. Glatard, and F. Desprez, *Workflow fairness control on online and non-clairvoyant distributed computing platforms*, in Euro-Par 2013 parallel processing, 2013, vol. 8097, pp. 102-113. **(AR: 26.8%)**
  77. R. Ferreira da Silva, T. Glatard, and F. Desprez, *On-line, non-clairvoyant optimization of workflow activity granularity on grids*, in Euro-Par 2013 parallel processing, 2013, vol. 8097, pp. 255-266.
  78. R. Ferreira da Silva, G. Juve, E. Deelman, T. Glatard, F. Desprez, D. Thain, B. Tovar, and M. Livny, *Toward fine-grained online task characteristics estimation in scientific workflows*, in

- 8th workshop on workflows in support of large-scale science (WORKS), 2013, pp. 58-67.
79. R. Ferreira da Silva, T. Glatard, and F. Desprez, *Self-healing of operational workflow incidents on distributed computing infrastructures*, in 12th IEEE/ACM international symposium on cluster, cloud and grid computing (CCGrid), 2012, pp. 318-325. (AR: 27.5%)
  80. T. Glatard, A. Marion, H. Benoit-Cattin, S. Camarasu-Pop, P. Clarysse, R. Ferreira da Silva, G. Forestier, B. Gibaud, C. Lartizien, H. Liebgott, K. Moulin, and D. Friboulet, *Multi-modality image simulation with the virtual imaging platform: illustration on cardiac echography and MRI*, in 9th IEEE international symposium on biomedical imaging, 2012, pp. 98-101. (AR: 34.5%)
  81. R. Ferreira da Silva, S. Camarasu-Pop, B. Grenier, V. Hamar, D. Manset, J. Montagnat, J. Revillard, J. Rojas Balderrama, A. Tsaregorodtsev, and T. Glatard, *Multi-infrastructure workflow execution for medical simulation in the virtual imaging platform*, in 2011 healthgrid conference, 2011.
  82. A. Marion, G. Forestier, H. Benoit-Cattin, S. Camarasu-Pop, P. Clarysse, R. Ferreira da Silva, B. Gibaud, T. Glatard, P. Hugonnard, C. Lartizien, H. Liebgott, S. Specovius, J. Tabary, S. Valette, and D. Friboulet, *Multi-modality medical image simulation of biological models with the virtual imaging platform (VIP)*, in 24th international symposium on computer-based medical systems, 2011, pp. 1-6. (AR: 35.0%)
- Book Chapters
1. R. Ferreira da Silva, T. Glatard, and F. Desprez, *Self-managing of operational issues for grid computing: the case of the virtual imaging platform*, in Emerging research in cloud distributed computing systems, S. Bagchi, Ed., IGI Global, 2015.

#### MEDIA

- *EPCC at SC24: the Data Analytics, Visualization, and Storage track*, <https://www.epcc.ed.ac.uk/whats-happening/articles/epcc-sc24-data-analytics-visualization-and-storage-track>, EPCC News, November 2024.
- *ORNL: Study Seeks to Unite HPC and Quantum Computing for Science*, <https://www.hpcwire.com/off-the-wire/ornl-study-seeks-to-unite-hpc-and-quantum-computing-for-science/>, HPCwire, August 2024.
- *Study seeks to unite high-performance computing, quantum computing for science*, <https://techxplore.com/news/2024-08-high-quantum-science.html>, TechXplore, August 2024.
- *Research Aims to Unite High-Performance, Quantum Computing*, <https://www.miragenews.com/research-aims-to-unite-high-performance-quantum-1304788/>, Mirage News, August 2024.
- *Study seeks to unite high-performance computing, quantum computing for science*, <https://www.ornl.gov/news/study-seeks-unite-high-performance-computing-quantum-computing-science>, ORNL News, August 2024.
- *Introducing the Consortium for the Advancement of Scientific Software (CASS)*, [https://bssw.io/blog\\_posts/introducing-the-consortium-for-the-advancement-of-scientific-software-cass](https://bssw.io/blog_posts/introducing-the-consortium-for-the-advancement-of-scientific-software-cass), Better Scientific Software, June 2024.
- *Pioneering Frontier: Here are a few of the many talented ORNL employees behind the construction and operation of Frontier*, [https://www.ornl.gov/sites/default/files/2023-11/Review%20v.56\\_n.2\\_web%20copy\\_0.pdf#page=23](https://www.ornl.gov/sites/default/files/2023-11/Review%20v.56_n.2_web%20copy_0.pdf#page=23), ORNL Review, vol. 56, no. 2, December 2023.
- *Julia as a unifying end-to-end workflow language on the Frontier exascale system*, <https://www.ornl.gov/research-highlight/julia-unifying-end-end-workflow-language-frontier-exascale-system>, ORNL Research Highlights, November 2023.
- *ExaWorks Provides Access to Community Sustained, Hardened, and Tested Components to Create Award-Winning HPC Workflows*, <https://www.hpcwire.com/off-the-wire/exaworks-provides-access-to-community-sustained-hardened-and-tested-components-to-create->

- 
- [award-winning-hpc-workflows/](#), HPCwire, July 2023.
  - *ExaWorks: Tested Component for HPC Workflows*, <https://insidehpc.com/2023/07/exaworks-tested-component-for-hpc-workflows/>, insideHPC, July 2023.
  - *DOE ASCR Selects Seed Collaborations for Software Sustainability*, <https://www.hpcwire.com/off-the-wire/doe-ascr-selects-seed-collaborations-for-software-sustainability/>, HPCwire, April 2023.
  - *DOE/ASCR Picks 3 National Labs for HPC and Post-Exascale Software Sustainability*, <https://insidehpc.com/2023/04/doe-ascr-picks-3-national-labs-for-hpc-and-post-exascale-software-sustainability/>, insideHPC, April 2023.
  - *HPC Career Notes: August 2022 Edition*, <https://www.hpcwire.com/2022/08/05/hpc-career-notes-august-2022-edition/>, HPCwire, August 2022.
  - *Pioneering Frontier: Automating at Exascale*, <https://www.olcf.ornl.gov/2022/07/25/pioneering-frontier-automating-at-exascale/>, OLCF News, July 2022.
  - *ORNL's Rafael Ferreira da Silva Elevated to IEEE Senior Member*, <https://www.hpcwire.com/off-the-wire/ornls-rafael-ferreira-da-silva-elevated-to-ieee-senior-member/>, HPCwire, July 2022.
  - *ORNL's Rafael Ferreira da Silva Elevated to IEEE Senior Member*, <https://insidehpc.com/2022/07/ornls-rafael-ferreira-da-silva-elevated-to-ieee-senior-member/>, insideHPC, July 2022.
  - *Rafael Ferreira da Silva Elevated to IEEE Senior Member*, <https://www.olcf.ornl.gov/2022/07/25/rafael-ferreira-da-silva-elevated-to-ieee-senior-member/>, OLCF News, July 2022.
  - *At ISC, the Green500 Witnesses a New Frontier in Efficient Computing*, <https://www.hpcwire.com/2022/06/08/at-isc-the-green500-witnesses-a-new-frontier-in-efficient-computing/>, HPCwire, June 2022.
  - *ORNL and UChicago Launch Workflows Community Platform*, <https://insidehpc.com/2022/03/ornl-and-uchicago-launch-workflows-community-platform/>, insideHPC, March 2022.
  - *ORNL and UChicago Lead the Launch of Unique Workflows Community Platform*, <https://www.hpcwire.com/off-the-wire/ornl-and-uchicago-lead-the-launch-of-unique-workflows-community-platform/>, HPC wire, March 2022.
  - *International Volunteer Team of Researchers Launch Groundbreaking Workflows Community Platform*, <https://www.olcf.ornl.gov/2022/03/23/international-volunteer-team-of-researchers-launch-groundbreaking-workflows-community-platform/>, OLCF News, March 2022.
  - *Future Generation Computer Systems 2021 Best Paper Award*, <https://www.sciencedirect.com/journal/future-generation-computer-systems/about/awards>, Future Generation Computer Systems Awards, October 2021.
  - *Prof. Casanova receives a Grant from the National Science Foundation for developing novel runtime resource managements techniques using simulation*, <https://www.ics.hawaii.edu/2021/08/prof-casanova-receives-a-grant-from-the-national-science-foundation-2-2>, Information and Computer Science News, University of Hawai'i, August 2021.
  - *Prof. Casanova receives a Grant from the National Science Foundation for developing novel Cyberinfrastructure simulation technology*, <https://www.ics.hawaii.edu/2021/07/prof-casanova-receives-a-grant-from-the-national-science-foundation-2>, Information and Computer Science News, University of Hawai'i, July 2021.
  - *USC ISI to Host Inaugural Pegasus Users Group Meeting*, <https://www.isi.edu/news/story/431>, ISI News, February 2021.
  - *Prof. Casanova receives a Grant from the National Science Foundation*,



---

<http://www.ics.hawaii.edu/2019/07/prof-casanova-receives-a-grant-from-the-national-science-foundation>, Information and Computer Science News, University of Hawai'i, July 2019.

- *ISI Researchers to "Model the World" with New DARPA Award*, <https://viterbischool.usc.edu/news/2018/03/modeling-impact-climate-human-activities-water-food>, USC Viterbi News, March 2018.
- *ISI Researchers Apply AI to Large-scale Integrated Modeling with New DARPA Award*, <https://www.isi.edu/news/story/345>, ISI News, March 2018.
- *Computer Scientist wins NSF Grant*, <http://www.udel.edu/udaily/2017/december/michela-taufer-NSF-analytics-molecular-dynamics>, UDaily, December 2017.
- *ISI's Pegasus Program Contributed to New Gravitational-Wave Detector Discovery*, <https://www.isi.edu/news/story/323>, USC/ISI, October 2017.
- *Nobel Prize-winning discovery on gravitational waves came about with contributions from USC scientists*, <http://news.usc.edu/129550/nobel-prize-winning-discovery-on-gravitational-waves-came-about-with-contributions-from-usc-scientists>, USC News, October, 2017.
- *ISI Publication Recognition Awards Celebrate Stellar Research*, <https://viterbischool.usc.edu/news/2017/08/isi-publication-recognition-awards-celebrate-stellar-research/>, USC Viterbi News, August 2017.
- *UH Mānoa Professor Casanova receives \$499,000 NSF grant*, <https://www.hawaii.edu/news/2016/09/28/uh-manoa-professor-casanova-receives-499000-nsf-grant/>, University of Hawai'i News, September 2016.

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CERTIFICATIONS

- **Ground Instructor**, Federal Aviation Administration, December 2020.
- **Private Aircraft Pilot**, Federal Aviation Administration, November 2020.