

JEAN LUCA BEZ

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Postdoctoral Scholar in Scientific Data Management at Lawrence Berkeley National Laboratory (LBNL), USA. Passionate about High-Performance I/O, Parallel I/O, Education, and Competitive Programming. His research focuses on optimizing the I/O performance of scientific applications by exploring I/O Forwarding, I/O Scheduling, and Automatic Tuning and Reconfiguration using Machine Learning techniques.

EDUCATION

Lawrence Berkeley National Laboratory (LBNL) May 2021 – Present
Postdoctoral Scholar in Scientific Data Management

Federal University of Rio Grande do Sul (UFRGS) February 2017 – May 2021
Doctorate in Computer Science

“*Dynamic Tuning and Reconfiguration of the I/O Forwarding Layer in HPC Platforms*” (Honors)

Advisor: Prof. Dr. Philippe O. A. Navaux (UFRGS)

Co-Advisor: Dr. Toni Cortes (Universitat Politècnica de Catalunya / Barcelona Supercomputing Center)

Federal University of Rio Grande do Sul (UFRGS) February 2015 – January 2017
Master in Computer Science

“*Evaluating I/O Scheduling Techniques at the Forwarding Layer and Coordinating Data Server Accesses*”

Advisor: Dr. Philippe O. A. Navaux (UFRGS)

Universidade Regional Integrada do Alto Uruguai e das Missões (URI) February 2010 – February 2015
Bachelor in Computer Science

“*Implementação de Técnicas de Tolerância a Falhas no URI Online Judge*”

(*Applying Fault Tolerance Techniques in URI Online Judge*)

Advisor: Prof. Msc. Paulo Ricardo Rodegheri (URI)

PUBLICATIONS

Journals

- J1 **Bez, J. L.**, Zanon Boito, F., Nou, R., Miranda, A., Cortes, T., Navaux, P. O. A. (2020). *Adaptive request scheduling for the I/O forwarding layer using reinforcement learning*. *Future Generation Computer Systems*, 112, 1156–1169. <https://doi.org/10.1016/j.future.2020.05.005>
- J2 Zaffalon, F., Prisco, A., Souza R., **Bez, J. L.**, Tonin, N., Penna, R. A., Botelho, S. *Estudo Comparativo entre Modelos que Estimam a Habilidade dos Estudantes em Ambientes Virtuais de Programação (Comparative Study between Models that Estimate Student's Skill in Virtual Programming Environments)*. *Revista Brasileira de Informática na Educação (Brazilian Journal of Computers in Education)*, 28, 776–795. <http://dx.doi.org/10.5753/rbie.2020.28.0.776>
- J3 **Bez, J. L.**, Carneiro, A. R., Pavan, P. J., Girelli, V. S., Boito, F. Z., Fagundes, B. A., Osthoff, C., da Silva Dias, P. L., Méhaut, J.-F., Navaux, P. O. (2019). *I/O performance of the Santos Dumont supercomputer*. *The International Journal of High Performance Computing Applications*, 34(2), 227–245. <https://doi.org/10.1177/1094342019868526>
- J4 Boito, F. Z., Inacio, E. C., **Bez, J. L.**, Navaux, P. O. A., Dantas, M. A. R., Denneulin, Y. (2018). *A Checkpoint of Research on Parallel I/O for High-Performance Computing*. *ACM Computing Surveys*, 51(2), 1–35. <https://doi.org/10.1145/3152891>
- J5 Pavan, P. J., K. Lorenzoni, R., R. Machado, V., **Bez, J. L.**, Padoin, E. L., Z. Boito, F., Navaux, P. O. A., Méhaut, J. (2018). *Energy efficiency and I/O performance of low-power architectures*. *Concurrency and Computation: Practice and Experience*, 31(18). <https://doi.org/10.1002/cpe.4948>
- J6 Dagostini, J. I.; **Bez, J. L.**; Tonin, N. A.; Rodegheri, P. R. *Um novo ambiente de discussões para o URI Online Judge*. *PERSPECTIVA*, v. 41, p. 65-74, 2017.

- J7 **Bez, J. L.**, Bernart, E. E., dos Santos, F. F., Schnorr, L. M., Navaux, P. O. A. (2016). *Performance and energy efficiency analysis of HPC physics simulation applications in a cluster of ARM processors*. *Concurrency and Computation: Practice and Experience*, 29(22), e4014. <https://doi.org/10.1002/cpe.4014>
- J8 Tonin, N. A.; **Bez, J. L.** *URI Online Judge: A New Interactive Learning Approach*. *Computer Technology and Application*, v. 4, p. 34-38, 201.

Conferences

- C1 **J. L. Bez**, H. Tang, B. Xie, D. Williams-Young, R. Latham, R. Ross, S. Oral, S. Byna, *I/O Bottleneck Detection and Tuning: Connecting the Dots using Interactive Log Analysis*, 2021 IEEE/ACM Sixth International Parallel Data Systems Workshop (PDSW), 2021, pp. 15-22, doi: 10.1109/PDSW54622.2021.00008.
- C2 T. Li, S. Byna, Q. Koziol, H. Tang, **J. L. Bez**, Q. Kang, *h5bench: HDF5 I/O Kernel Suite for Exercising HPC I/O Patterns*.
- C3 **J. L. Bez**, A. Miranda, R. Nou, F. Z. Boito, T. Cortes and P. Navaux, *Arbitration Policies for On-Demand User-Level I/O Forwarding on HPC Platforms*, 2021 IEEE International Parallel and Distributed Processing Symposium (IPDPS), 2021, pp. 577-586, doi: 10.1109/IPDPS49936.2021.00066.
- C4 **Bez, J. L.**, Boito, F. Z., Nou, R., Miranda, A., Cortes, T., Navaux, P. O. A. (2019, October). *Detecting I/O Access Patterns of HPC Workloads at Runtime*. 2019 31st International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD). <https://doi.org/10.1109/sbac-pad.2019.00025>
- C5 Boito, F. Z., Nou, R., Pilla, L. L., **Bez, J. L.**, Mehaut, J.-F., Cortes, T., Navaux, P. O. A. (2019, July). *On server-side file access pattern matching*. 2019 International Conference on High Performance Computing & Simulation (HPCS). <https://doi.org/10.1109/hpcs48598.2019.9188092>
- C6 Pavan, P. J., **Bez, J. L.**, Serpa, M. S., Boito, F. Z., Navaux, P. O. A. (2019, October). *An Unsupervised Learning Approach for I/O Behavior Characterization*. 2019 31st International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD). <https://doi.org/10.1109/sbac-pad.2019.00019>
- C7 Ramos Carneiro, A., **Bez, J. L.**, Zanon Boito, F., Alves Fagundes, B., Osthoff, C., Navaux, P. O. A. (2018, March). *Collective I/O Performance on the Santos Dumont Supercomputer*. 2018 26th Euromicro International Conference on Parallel, Distributed and Network-Based Processing (PDP). <https://doi.org/10.1109/pdp2018.2018.00015>
- C8 Dagostini, J.; LIMA, M. V. de M.; **Bez, J. L.**; Tonin, N. A. *URI Online Judge Blocks: Construindo Soluções em uma Plataforma Online de Programação*. In: XXIX Simpósio Brasileiro de Informática na Educação (Brazilian Symposium on Computers in Education), 2018, Fortaleza. <http://dx.doi.org/10.5753/cbie.sbie.2018.168>
- C9 Prisco, A., Penna, R., Evandro, Botelho, S., Tonin, N., **Bez, J.** (2018, October). *A multidimensional ELO model for matching learning objects*. 2018 IEEE Frontiers in Education Conference (FIE). <https://doi.org/10.1109/fie.2018.8658847>
- C10 **Bez, J. L.**, Boito, F. Z., Schnorr, L. M., Navaux, P. O. A., Mehaut, J.-F. (2017). *TWINS: Server Access Coordination in the I/O Forwarding Layer*. 2017 25th Euromicro International Conference on Parallel, Distributed and Network-Based Processing (PDP). <https://doi.org/10.1109/pdp.2017.61>
- C11 Boito, F. Z., Bez, J. L., Dupros, F., Dantas, M. A. R., Navaux, P. O. A., Aochi, H. (2017). *High Performance I/O for Seismic Wave Propagation Simulations*. 2017 25th Euromicro International Conference on Parallel, Distributed and Network-Based Processing (PDP). <https://doi.org/10.1109/pdp.2017.92>
- C12 Prisco, A.; Santos, R.; Botelho, S. S. da C.; Tonin, N.; **BEZ, J. L.** *Um Sistema de Recomendação Baseado em um Modelo Cognitivo de Aprendizagem*. In: XXVIII Simpósio Brasileiro de Informática na Educação SBIE (Brazilian Symposium on Computers in Education), 2017, Recife, 2017. v. 1. p. 1667-1676. <http://dx.doi.org/10.5753/cbie.sbie.2017.1667>
- C13 Prisco, A., dos Santos, R., Botelho, S., Tonin, N., **Bez, J.** (2017, October). *Using information technology for personalizing the computer science teaching*. 2017 IEEE Frontiers in Education Conference (FIE). <https://doi.org/10.1109/fie.2017.8190727>
- C14 Dagostini, J.; Lima, M. V. de M.; Bucior, L.; Tonin, N. A.; **Bez, J. L.** *Incentivando a Aprendizagem de Algoritmos Através do URI Online Judge Forum 2.0*. In: XXVIII Simpósio Brasileiro de Informática na Educação SBIE (Brazilian Symposium on Computers in Education), 2017, Recife, 2017. v. 1. p. 1781. <http://dx.doi.org/10.5753/cbie.sbie.2017.1781>
- C15 Pavan, P. J.; Lorenzoni, R. K.; **Bez, J. L.**; Boito, F. Z.; Padoin, E. L.; Navaux, P. O. A.; Mehaut, J. *Eficiência Energética e Desempenho de E/S com Arquiteturas de Baixa Potência*. In: Simpósio em Sistemas Computacionais de Alto Desempenho, 2016, Aracaju. Anais da 17a Edição do Simpósio em Sistemas Computacionais de Alto Desempenho, 2016. v. 1.
- C16 dos Anjos, J. C. S., Assuncao, M. D., **Bez, J.**, Geyer, C., de Freitas, E. P., Carissimi, A., Costa, J. P. C. L., Fedak, G., Freitag, F., Markl, V., Fergus, P., Pereira, R. (2015, October). *SMART: An Application Framework for Real Time Big Data Analysis on Heterogeneous Cloud Environments*. 2015 IEEE International Conference on Computer and Information Technology; Ubiquitous Computing and Communications; Dependable, Autonomic and Secure Computing; Pervasive Intelligence and Computing (CIT/IUCC/DASC/PICOM). <https://doi.org/10.1109/cit/iucc/dasc/picom.2015.29>

- C17 **Bez, J. L.**; Bernart, E. E.; Santos, F. F.; Schnorr, L. M.; Navaux, P. O. A. *Análise da Eficiência Energética de uma Aplicação HPC de Geofísica em um Cluster de Baixo Consumo*. In: WSCAD 2015 - XVI Simpósio em Sistemas Computacionais de Alto Desempenho, v. 1. p. 228-239, Florianópolis, 2015.
- C18 **Bez, J. L.**; Ferreira, C. E.; Tonin, N. A.; *URI Online Judge Academic: A Tool for Professors*. In: 2013 International Conference on Advanced ICT, 2013. <http://dx.doi.org/10.1109/ICCSE.2014.6926445>
- C19 Tonin, N. A.; Zanin, F. A.; **Bez, J. L.** *Enhancing traditional Algorithms classes using URI Online Judge*. In: 2012 International Conference on eLearning and eTechnologies in Education (ICEEE), 2012, Lodz. v. 1. p. 115-118. <http://dx.doi.org/10.1109/ICeLeTE.2012.6333402>
- C20 Tonin, N. A.; Castanho, C. L. O.; **Bez, J. L.** *Using the portal URI Online Judge as a Programming Learning Platform for Computer Science Students*. In: London Internatinal Conference on Education (LICE-2012), v. 1. p. 357-360, 2012.
- C21 Tonin, N. A.; **Bez, J. L.** *URI Online Judge: A New Classroom Tool For Interactive Learning*. In: WORLDCOMP'12 - The 2012 World Congress in Computer Science, Computer Engineering, and Applied Computing, 2012, Las Vegas. FECS 2012. USA: CSREA Press, 2012. v. 1. p. 242-246.

Workshops

- W1 **Bez, J. L.**, Zanon Boito, F., Nou, R., Miranda, A., Cortes, T., Navaux, P. O. A. *Towards On-Demand I/O Forwarding in HPC Platforms*. International Parallel Data Systems Workshop (PDSW) at The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC20), 2020.
- W2 **Bez, J. L.**, Schnorr, L. M., Navaux, P. O. A. *Characterizing Anomalies of a Multicore ARMv7 Cluster with Parallel N-Body Simulations*. 2015 International Symposium on Computer Architecture and High Performance Computing Workshop (SBAC-PADW). <https://doi.org/10.1109/sbac-padw.2015.18>
- W3 **Bez, J. L.**; Boito, F. Z.; Schnorr, L. M.; Navaux, P. O. A. *Coordinating Data Access at I/O Forwarding Nodes*. In: Workshop de Processamento Paralelo e Distribuído. Porto Alegre, 2016. v. 1. p. 9-11.
- W4 Machado, V. R.; Boito, F. Z.; Kassick, R. V.; **Bez, J. L.**; Navaux, P. O. A.; Denneulin, Y. *Parallel Storage Devices Profiling with SeRRa*. In: 14^o WPerformance - XIV Workshop em Desempenho de Sistemas Computacionais e de Comunicação, 2015, Recife.
- W5 Selivon, M.; **Bez, J. L.**; Tonin, N. A. *URI Online Judge Academic: Integração e Consolidação da Ferramenta no Processo de Ensino/Aprendizagem*. In: 23^o WEI - Workshop sobre Educação em Computação, 2015, Recife. Anais / XXXV Congresso da Sociedade Brasileira de Computação, 2015.

Short Papers

- S1 Lima, M. V. M.; Rodegheri, P. R.; Tonin, N. A.; **Bez, J. L.** *Uma Ferramenta Online para Execução de Scripts em SQL*. In: Escola Regional de Banco de Dados, 2017, Passo Fundo. Anais da XIII Escola Regional de Banco de Dados, 2017. Passo Fundo: Ed. Universidade de Passo Fundo, 2017. v. 1. p. 127-130.
- S2 Rampon, N. G.; Boito, F. Z.; **Bez, J. L.**; Navaux, P. O. A. *Otimização de E/S Paralela em Simulações de Ondas Sísmicas*. In: Escola Regional de Alto Desempenho (ERAD/RS), 2017, Ijuí. Anais da XVI Escola Regional de Alto Desempenho (ERAD/RS), 2017. v. 1. p. 343-346.
- S3 Machado, V. R.; Braga, A. B.; Rampon, N. G.; Boito, F. Z.; **Bez, J. L.**; Padoin, E. L.; Navaux, P. O. A. *Avaliação do Consumo Energético de processadores ARM em Sistemas de Arquivos Paralelos*. In: Escola Regional de Alto Desempenho (ERAD/RS), 2017, Ijuí. Anais da XVII Escola Regional de Alto Desempenho (ERAD/RS). Ijuí: Impressos Portão, 2017. v. 1. p. 263-266.
- S4 Braga, A. B.; Machado V. R.; **Bez, J. L.**; Boito, F. Z.; Navaux, P. O. A. *Influência do Padrão de Acesso na Eficiência Energética de Dispositivos SSDs*. In: Escola Regional de Alto Desempenho (ERAD/RS), 2017, Ijuí. Anais da XVII Escola Regional de Alto Desempenho (ERAD/RS). Ijuí: Impressos Portão, 2017. v. 1. p. 331-334.
- S5 **Bez, J. L.**; Boito, F. Z.; Schnorr, L. M.; Navaux, P. O. A. *Escalonamento de I/O em Servidores de Encaminhamento*. In: Escola Regional de Alto Desempenho (ERAD/RS), 2016, São Leopoldo. Anais da XVI Escola Regional de Alto Desempenho (ERAD/RS). São Leopoldo: Impressos Portão, 2016. v. 1. p. 173-174.
- S6 Pavan, P. J.; Lorenzoni, R. K.; **Bez, J. L.**; Boito, F. Z.; Padoin, E. L.; Navaux, P. O. A. *Análise de Consumo Energético e Desempenho de Operações E/S em Arquiteturas de Baixa Potência*. In: Workshop de Processamento Paralelo e Distribuído. Porto Alegre, 2016. v. 1. p. 5-9.
- S7 Braga, A. B.; Rampon, N. G.; Machado, V. R.; **Bez, J. L.**; Boito, F. Z.; Kassick, R. V.; Padoin, E. L.; Navaux, P. O. A. *Viability of Low-Power Architectures as Parallel File Systems*. In: Workshop de Processamento Paralelo e Distribuído. Porto Alegre, 2016. v. 1. p. 27-30.

- S8 **Bez, J. L.**; Boito, F. Z.; Kassick, R. V.; Machado, V. R.; Navaux, P. O. A. . *Faster Storage Devices Profiling with Parallel SeRRa*. In: Workshop de Processamento Paralelo e Distribuído, 2015, Porto Alegre. v. 1. p. 33-36.

Posters

- P1 **Bez, J. L.**, Boito, F. Z., Nou, R., Miranda, A., Cortes, T., Navaux, P. O. A. (2019, October). *Towards the Reconfiguration of the I/O Forwarding Layer*. 35th IEEE International Parallel & Distributed Processing Symposium.

Book Chapters

- B1 Serpa, M. S.; **Bez, J. L.**; Cruz, E. H. M.; Diener, M.; Zanata, M. A.; Navaux, P. O. A. . *Intel Modern Code: Programação Vetorial e Paralela em Arquiteturas Intel Xeon e Intel Xeon Phi*. In: Edson Luiz Padoin; Márcia Cristina Cera; Andrea Schwertner Charão. (Org.). Escola Regional de Alto Desempenho. 1ed.Ijuí. , 2017, v. 1, p. 63-80.

Media

- M1 **Bez, J. L.** (2018). *Computer Scientists in Action: Jean Luca Bez, High Performance Computing*. XRDS: Crossroads, The ACM Magazine for Students, 25(1), 64–65. <https://doi.org/10.1145/3265939>

PRESENTATIONS AND INVITED TALKS

Research Talks

- R1 **Bez, J. L.**, Boito, F. Z., Nou, R., Miranda, A., Cortes, T., Navaux, P. O. A. *A Reinforcement Learning Strategy to Tune Request Scheduling at the I/O Forwarding Layer*. HPC-IODC: HPC I/O in the Data Center Workshop, ISC High Performance (Virtual), 2020.
- R2 **Bez, J. L.**, Boito, F. Z., Nou, R., Miranda, A., Cortes, T., Navaux, P. O. A. *Dynamic Reconfiguration of the I/O Forwarding Layer of HPC Architectures*. JLESC – Joint Laboratory on Extreme Scale Computing, Barcelona, Spain, 2018.

Invited Talks

- I1 **Bez, J. L.**, Byna, S. *Visualizing Darshan Extended Traces*. Analyzing Parallel I/O – Birds of a Feather, SC'21: Supercomputing, St. Louis, USA, 2021.
- I2 **Bez, J. L.** *De Arquivos a Big Data: Como Supercomputadores Armazenam Dados*. Semana Acadêmica Integrada dos Cursos de Ciência da Computação da URI, Brazil, 2020.
- I3 **Bez, J. L.**; Tonin, N. A. *URI Online Judge: Plataforma e Desafios*. Sétima Semana Acadêmica Integrada das Ciências Computacionais – VII SAICC, Universidade Federal do Rio Grande (FURG), Rio Grande, Brazil, 2017.
- I4 Tonin, N. A. ; **Bez, J. L.** *URI Online Judge - Programação, Aprendizado e Desafios*. Serviço Nacional de Aprendizagem Comercial (SENAC), Passo Fundo, Brazil, 2012.
- I5 Tonin, N. A. ; **Bez, J. L.** *Portal URI Online Judge e a Maratona de Programação*. I Workshop Desafio Pela Inovação. Universidade de Passo Fundo, Passo Fundo, Brazil, 2012.
- I6 Tonin, N. A. ; **Bez, J. L.** *URI Online Judge, um portal para a Prática de Programação*. XXI Simpósio de Inovação em Tecnologias Computacionais. Universidade Regional Integrada do Alto Uruguai e das Missões, Santo Ângelo, Brazil, 2012 (*Invited Talk*).
- I7 Tonin, N. A. ; **Bez, J. L.** *URI Online Judge - Programação, Aprendizado e Desafios*. Universidade Regional Integrada do Alto Uruguai e das Missões, Frederico Westphalen, Brazil, 2012.
- I8 Tonin, N. A. ; **Bez, J. L.** *URI Online Judge, um Portal para a Prática de Programação*. SITIS 2012 - XXI Simpósio de Inovação em Tecnologias Computacionais. Universidade Regional Integrada do Alto Uruguai e das Missões, Santo Ângelo, Brazil, 2012.

Presentations

- P1 **Bez, J. L.**; Navaux, P. O. A. *Evaluating I/O Scheduling Techniques at the Forwarding Layer and Coordinating Data Server Accesses*. 31º Concurso de Teses e Dissertações (CTD) – XXXVIII Congresso da Sociedade Brasileira de Computação. Sociedade Brasileira de Computação. Natal, Rio Grande do Norte, Brazil, 2018.
- P2 **Bez, J. L.**; Tonin, N. A. *URI Online Judge: Coding and Beyond*;. ACM International Collegiate Programming Contest (ICPC) Collaborative Learning Institute Symposium (CLIS), Phuket, Thailand, 2016.
- P3 **Bez, J. L.**; Boito, F. Z.; Schnorr, L. M.; Navaux, P. O. A. . *Coordinating Data Access at I/O Forwarding Nodes*. Workshop de Processamento Paralelo e Distribuído. Porto Alegre, Brazil, 2016.

- P4 **Bez, J. L.**, Schnorr, L. M., Navaux, P. O. A. *Characterizing Anomalies of a Multicore ARMv7 Cluster with Parallel N-Body Simulations*. 2015 International Symposium on Computer Architecture and High Performance Computing Workshop (SBAC-PADW), Florianópolis, Brazil, 2016.
- P5 **Bez, J. L.**; Tonin, N. A.; Rodegheri, P. R. *URI Online Judge Academic: A Tool for Algorithms and Programming Classes*. IEEE International Conference on Computer Science & Education. Univ. of British Columbia, Vancouver, Canada, 2014.
- P6 **Bez, J. L.**; Tonin, N. A. *The URI Online Judge Learning Platform*. ACM International Collegiate Programming Contest (ICPC) Collaborative Learning Institute Symposium (CLIS), Sanit Petersburg, Russia, 2013.
- P7 Tonin, N. A. ; **Bez, J. L.** *URI Online Judge: A New Classroom Tool For Interactive Learning*. WORLDCOMP'12 - The 2012 World Congress in Computer Science, Computer Engineering, and Applied Computing, Las Vegas, USA, 2012.

GRANTS AND FELLOWSHIPS

Grants

- G1 **Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)**. Programa Institucional de Internacionalização (PRINT). "Sandwich" Doctorate / Doctoral Stay. Grant 88887.363381/2019-00 (€ 9,640.00).

Scholarships

- S1 **Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)**. *Ph.D. Scholarship* (2017 – 2021).
- S2 **Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)**. *Masters Scholarship* (2015).

AWARDS

Contest of Thesis and Dissertations in Computer Architecture and High-Performance Computing First Place (Thesis) — October 2021

"Dynamic Tuning and Reconfiguration of the I/O Forwarding Layer in HPC Platforms"

Simpósio de Sistemas Computacionais de Alto Desempenho, promoted by the Brazilian Computer Society

Contest of Thesis and Dissertations in Computer Architecture and High-Performance Computing First Place (Dissertations) — October 2017

"Evaluating I/O Scheduling Techniques at the Forwarding Layer and Coordinating Data Server Accesses"

Simpósio de Sistemas Computacionais de Alto Desempenho, promoted by the Brazilian Computer Society

Brazilian Computer Society (SBC) Highlight Student Award (Summa Cum Laude – 9.517 / 10.0)

Awarded by Brazilian Computer Society (SBC) – February 2017

URI Erechim Best Student Award (Summa Cum Laude – 9.517 / 10.0)

Awarded by Universidade Regional Integrada do Alto Uruguai e das Missões (URI) – February 2015

URI University Extension Projects — Highlight Student Award*

Awarded by Universidade Regional Integrada do Alto Uruguai e das Missões (URI) – 2013

URI Online Judge Project (urionlinejudge.edu.br)

URI University Extension Projects — Highlight Student Award*

Awarded by Universidade Regional Integrada do Alto Uruguai e das Missões (URI) – 2012

URI Online Judge Project (urionlinejudge.edu.br)

* Awarded to undergraduate students for research and extension projects based on results and impact on the community.

VISITING RESEARCHER

Barcelona Supercomputing Center (Barcelona, Spain)

Visiting Researcher / Doctoral Stay

August 2019 – February 2020

Inria Centre de Recherche Grenoble Rhône-Alpes (Montbonnot, France)

Visiting Researcher (Datamove)

January 2017 – February 2017

TEACHING EXPERIENCE

Teaching Assistant

TA1 *Advance Computer Architectures* (2016/1)
Federal University of Rio Grande do Sul
Advisor: Prof. Dr. Philippe O. A. Navaux (UFRGS)

TA2 *Compilers* (2015/2)
Federal University of Rio Grande do Sul
Advisor: Prof. Dr. Philippe O. A. Navaux (UFRGS)

Tutorials and Short Term Courses

ST1 **Bez, J. L.**. *Introdução a Programação MPI com Extensões para E/S (MPI-IO)*. Escola de Verão Supercomputador SDumont. National Laboratory for Scientific Computing (LNCC), Petrópolis, Brazil, 2019.

ST2 **Bez, J. L.**. *Introdução ao MPI-IO*. Escola Regional de Alto Desempenho do Estado do Rio Grande do Sul (ERAD/RS 2018), Porto Alegre, Brazil, 2018.

ST3 **Bez, J. L.**; Boito, F. Z. ; Navaux, P. O. A. . *Introdução a Programação MPI com Extensões para E/S (MPI-IO)*. Escola Supercomputador SDumont. National Laboratory for Scientific Computing (LNCC), Petrópolis, Brazil, 2018.

ST4 Alves, M. A. Z.; Diener, M.; Cruz, E. H. M.; **Bez, J. L.**; Navaux, P. O. A. *Workshop Parallel Programming and Optimization for Intel Architecture*. UniRitter, Porto Alegre, Brazil, 2016.

ST5 **Bez, J. L.**; Nava, M. L. *Desenvolvimento Web*. Universidade Regional do Alto Uruguai e das Missões, Erechim, 2014.

ST6 **Bez, J. L.**; Nava, M. L. *Desenvolvimento Web*. Universidade Regional do Alto Uruguai e das Missões, Erechim, 2013.

ST7 Tonin, N. A.; **Bez, J. L.** *Informática para Crianças de Ensino Fundamental no Programa AABB Comunidade*. Universidade Regional do Alto Uruguai e das Missões, Erechim, Brazil, 2011.

ADVISING

Jessica Imlau Dagostini. *Avaliação da Aplicabilidade de Containers em um Sistema Distribuído de Julgamento de Códigos*. 2019. Trabalho de Conclusão de Curso. (Graduação em Ciência da Computação)
Universidade Regional Integrada do Alto Uruguai e das Missões

Advisor: Neilor A. Tonin (URI)

Co-Advisor: **Jean Luca Bez** (UFRGS)

RESEARCH PROJECTS

P1 Towards Exascale I/O

2018 – Present

Collaborator on the Towards Exascale I/O research project that combines the skills of the Parallel and Distributed Processing Group (GPPD) of the Federal University of Rio Grande do Sul with the research teams of the Barcelona Supercomputing Center (BSC), INRIA, and the National Laboratory for Scientific Computing (LNCC). The GPPD has maintained a line of research on HPC storage for more than 15 years, through various postgraduate studies that have resulted in indexed publications, in addition to several doctoral theses and master's dissertations in I/O for HPC. The BSC Storage group has recognized experience in I/O for HPC due to its expertise with the MareNostrum supercomputer. INRIA Grenoble and Bordeaux have recognized experience in projects with high storage capacities and I/O. Finally, this project aims to bring collaborations in parallel I/O for HPC by proposing and evaluating strategies that help reach Exascale.

Financed by the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brazil.

P2 High Performance Computing for Energy (HPC4E) (hpc4e.eu)

2016 – 2016

Collaborator on the HPC4E project, which aimed to apply new exascale HPC techniques to energy industry simulations, customizing them, and going beyond the state-of-the-art for different energy source simulations. The HPC4E consortium encompassed 13 partners, seven from Europe, and six from Brazil.

COMMUNITY SERVICE

Community

M1 ACM SIGHPC: Membership Coordinator, 2021 – Present

M2 IO500: Web Designer, 2020 – Present

Committee

M1 SSDBM'22: Scientific and Statistical Database Management Conference, PC member, 2022

M2 REX-IO'22: Workshop on Re-envisioning Extreme-Scale I/O for Emerging Hybrid HPC Workloads, PC member, 2022

M3 CCGrid 2022: PC member of Storage and I/O Systems, 2022

M4 SC'21: Student Volunteers (Student Volunteer Reviewers, Virtual Logistics Liaison), 2021

M5 SC'21: Virtual Logistics Operations Subcommittee (Virtual Logistics Student Volunteer Liaison), 2021

M6 SC'21: Artifact Description/Article Evaluation (AD/AE) Submissions Committee Member, 2021

M7 REX-IO'21: Workshop on Re-envisioning Extreme-Scale I/O for Emerging Hybrid HPC Workloads, PC member, 2021

M8 Escola Regional de Alto Desempenho da Região Sul – ERAD/RS – Fórum de Iniciação Científica, 2022

M9 Escola Regional de Alto Desempenho da Região Sul – ERAD/RS – Fórum de Iniciação Científica, 2021

M10 Escola Regional de Alto Desempenho da Região Sul – ERAD/RS – Fórum de Iniciação Científica, 2020

M11 XV Workshop de Processamento Paralelo e Distribuído/UFRGS – WSPPD 2017

Events

E1 Navaux, P. O. A., Geyer, C., Schnorr, L. M., **BEZ, J. L.**, Serpa, M. S., Souza Junior, P., *XV Workshop de Processamento Paralelo e Distribuído/UFRGS - WSPPD 2017*, Universidade Federal do Rio Grande do Sul, Instituto de Informática, Porto Alegre, 2017.

Outreach Projects

C1 **URI Online Judge** (urionlinejudge.com.br) 2012 – Present

URI Online Judge is an educational project created in Brazil by Neilor Tonin and Jean Luca Bez to help students learn and practice algorithms and programming languages. It has more than 500,000 registered users worldwide and has automatically evaluated over 20 million source-code solutions for programming assignments. The platform has received more than 20 million solutions. It has also received a Brazilian National Award (Prêmio Santander Universidades) for its impact and importance. The project was presented at the ACM International Collegiate Programming Contest (ICPC) World Finals in St. Petersburg, Russia, and in Phuket, Thailand.

VOLUNTEER EXPERIENCE

V1 **Selected Lead Student Volunteer** at ACM/IEEE SC'20 Supercomputing Conference, Atlanta (USA), 2020.
Guided Interest Groups (GIG) on Storage and I/O for HPC

V2 **Selected Student Volunteer** at ACM/IEEE SC'19 Supercomputing Conference, Denver (USA), 2019.

V3 **ICPC Judge** at the International Collegiate Programming Contest (ICPC) South America/Brazil First Phase, 2018.

V4 **ICPC Deputy/Student Volunteer** at International Collegiate Programming Contest (ICPC), Phuket, Thailand, 2016.

LANGUAGES

Portuguese (Native)

English (Fluent) – TOEFL ITP 650 score (C1) 2018

French (Basic – A2.1)

Catalan (Basic 1 – A2.1)