

# Jessica Imlau Dagostini

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🏠 Personal Page   in LinkedIn   🐙 GitHub

## AREAS OF INTEREST

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High-Performance Computing | GPGPU Programming | Graph Algorithms | Optimization and Load Balancing | Programming Languages

## EDUCATION

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Sep,2022 – Present

### Ph.D. Student in Computer Science

University of California Santa Cruz (UCSC), United States

Co-Advisor: Prof. Dr. Scott Beamer

Co-Advisor: Prof. Dr. Tyler Sorensen

Mar,2020 – Mar,2022

### M.Sc. in Computer Science (GPA: A)

Federal University of Rio Grande do Sul (UFRGS), Brazil

*“Performance Improvements Applied in an Electromagnetic Inversion Application Focused on Homogeneous and Heterogeneous Computational Environments”*

Advisor: Prof. Dr. Lucas Mello Schnorr

Feb,2015 – Dec,2019

### B.Sc. in Computer Science (Summa Cum Laude – 9.39 / 10)

Universidade Regional Integrada do Alto Uruguai e das Missões - URI Erechim, Brazil

*“Evaluating the Container’s Applicability in a Distributed System of Code Judgement”*

*(Avaliação da Aplicabilidade de Containers em um Sistema Distribuído de Julgamento de Códigos.)*

Advisor: Prof. Ms. Neilor Avelino Tonin

Co-advisor: Dr. Jean Luca Bez

## PROFESSIONAL EXPERIENCE

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Jun,2023 – Present

### PhD Intern – High Performance Computing

Pacific Northwest National Laboratory

Advisor: Dr. Joseph B Manzano

- Summer internship
- TBD

Jan,2023 – Mar,2023

### Teaching Assistant

University of California, Santa Cruz, United States

Courses:

- CSE113 - Parallel and Concurrent Programming (Winter 2023)

Sept,2022 – Present

### Graduate Student Researcher

University of California, Santa Cruz, United States

Co-advisor: Prof. Dr. Scott Beamer

Co-advisor: Prof. Dr. Tyler Sorensen

- Working with parallel programming, optimizations and graph reordering for high-performance computing

Jan,2021 – Jul, 2022

### Principal System Architect

beecrowd, Brazil

- Responsible for managing changes and fundamental structure of beecrowd judge;
- Manage and administrate applications' database;
- Organize and supervise team's activities.

Mar,2020 – Mar, 2022

**Graduate Student Researcher**

Federal University of Rio Grande do Sul (UFRGS), Brazil

*"Computational Optimization of Data Inversion Codes"**(Otimização Computacional de Códigos de Inversão de Dados)*

Advisor: Prof. Dr. Lucas Mello Schnorr

- This project aims to investigate and implement computational techniques that improve the execution and quality of results of Data Inversion codes;
- Evaluated, proposed and applied algorithms to improve the load balancing and scalability of a data inversion application of survey oil and gas in homogeneous and heterogeneous systems.

May,2019 – Sep,2019

**Adjunct Faculty**

National Service for Commercial Education - RS, SENAC/RS, Brasil.

- Taught robotics to K-12 students in a project complementary to school;
- Teacher in two components of the Fundamentals of Informatics course (Compact Internet and Compact PowerPoint).

Jan,2019 – Mar,2019

**Intern Researcher (Summer Program)**

Brazilian Center for Research in Energy and Materials (CNPEM), Brazil

Brazilian Synchrotron Light Laboratory (LNLS), Brasil

*"GPU Code Implementation to Phase Recovery on Fraunhofer Region"**(Implementação em GPU para a Recuperação da Fase na Região de Fraunhofer)*

Advisor: Dr. Eduardo Xavier Miqueles

- Summer internship project consisted of the development of a specific tool for the restoration of projective images obtained in the Fraunhofer region;
- Main developer of an application in CUDA to be incorporated into the pipeline of the automatic processing of the detectors from the Sirius synchrotron light source;
- Discovered some bugs at cuFFT library that were reported to NVIDIA developers.

Aug,2018 – Jul,2019

**Undergraduate Student Extensionist**

Universidade Regional Integrada do Alto Uruguai e das Missões - URI Erechim, Brazil

*"Insertion of High School Students from Erechim on Brazilian Olympiads in Informatics"**(A Inserção de Alunos do Ensino Médio de Erechim na Olimpíada Brasileira de Informática)*

Advisor: Prof. Ms. Neilor Avelino Tonin

- Project to teach algorithms and programming languages to High School students
- Taught programming to 45 students that enrolled in the Brazilian Olympiads in Informatics (OBI)

Aug,2015 – Jul,2018

**Undergraduate Research Assistant**

Universidade Regional Integrada do Alto Uruguai e das Missões - URI Erechim, Brazil

- *"A Study About Distributed Systems to be Applied on URI Online Judge Portal"*  
*(Um Estudo Sobre Sistemas Distribuídos para Aplicação no Portal URI Online Judge)*

Advisor: Prof. Ms. Neilor Avelino Tonin

- Distributed the front-end servers from URI Online Judge;
- Studied and applied tests to verify which system distribution will be the best option for the environment

- *"Developing a Customized Online Forum to URI Online Judge"*  
*(Criação de um Fórum Customizado para o Portal URI Online Judge)*

Advisor: Prof. Ms. Neilor Avelino Tonin

- Rebuilt the online forum from the URI Online Judge (now beecrowd) platform, applying some concepts related to Human-Computer Interaction, developed using CakePHP framework;
- The new version was deployed in April, 2017, now being used by 300k users, with more than 8800 posts (<https://www.becrowd.com.br/judge/en/forum>).

Apr,2012 – Aug,2014

**Junior Student Research**

Universidade Regional Integrada do Alto Uruguai e das Missões - URI Erechim, Brazil

Escola Estadual Normal José Bonifácio (High School), Brazil

*"Discussion and Deepening of Concepts Regarding the Study of Mathematical Functions on High School"**(Discussão e Aprofundamento de Conceitos a Respeito do Estudo de Funções do Ensino Médio)*

Advisor: Prof. Ms. Clemerson Alberi Pedroso

- Investigated, discuss, and deepen mathematical concepts related to the study of functions and contribute to the approximation of scientific-theoretical knowledge didactic-operational knowledge in Exact Sciences;
- Developed a diversity of studies from applied mathematics and created a collection of problems modeled from real-world problems.

**AWARDS**

2021

**Students@SC'21 Best Lightning Talk**

Awarded by Students@SC Program from Supercomputing'21 Conference

2021

**BRASA Pré Pós-Graduação Mentee**

Selected mentee for the Brazilian Student Association (BRASA) PRÉ Pós-Graduação (Graduate Program) for Ph.D Program.

2020

**URI Erechim Best Student Award**

SUMMA CUM LAUDE (9.39 / 10.0)

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

2020

**SBC Highlight Student Award**

SUMMA CUM LAUDE (9.39 / 10.0)

Awarded by Brazilian Computer Society (SBC)

2016

**2º Place - Tecnomate Contest 2016, Categoria "Libres"**

Awarded by Departamento de Ingeniería en Sistemas de Información, UTN Santa Fé (Argentina).

2010

**Honorable Mention on 6th Brazilian Math Olympiads of Public Schools (OBMEP)**

Awarded by Conselho Nacional de Pesquisa (CNPq), Brasil.

**GRANTS & FELLOWSHIPS**

Apr,2023 – Jun,2023

**UCSC Dean's Fellowship**

Academic funding given to a small number of outstanding new PhD admitted students at UCSC.

Mar,2020 – Mar,2022

**Master Scholarship**

Financial scholarship provided by Petróleo Brasileiro, to work in the research project "Otimização Computacional de Códigos de Inversão de Dados" (Computational Optimization of Data Inversion Codes)

Fev,2015 – Dez,2019

**University for All Program (ProUni)**

Financial and merit-based full scholarship provided by Brazilian Federal Government to cover university tuition (selected as 1st place)

**PUBLICATIONS****JOURNAL PUBLICATIONS**

- **Dagostini, J.; Bez, J. L.; Tonin, N. A.; Rodegheri, P. R. (2017) Um novo ambiente de discussões para o URI Online Judge** *Perspectiva - Erechim*, v. 41, p. 65-74, 2017

**FULL PAPERS PUBLISHED IN CONFERENCES**

- **Dagostini, J.; H. C. P. da Silva, V. G. Pinto, R. M. Velho, E. S. L. Gastal and L. M. Schnorr. (2021) Improving Workload Balance of a Marine CSEM Inversion Application.** In: *2021 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*, 2021, pp. 704-713, <https://doi.org/10.1109/IPDPSW52791.2021.00107>.
- **Dagostini, J.; Lima, M. V. de M.; Bez, J. L.; Tonin, N. A. (2018) 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)*, Fortaleza, 2018. v. 1. p. 168-177. <http://dx.doi.org/10.5753/cbie.sbie.2018.168>

- **Dagostini, J.; Lima, M. V. de M.; Tonin, N. A. (2018) Multilayer Perceptron para Classificação de Sentimento em Textos utilizando a biblioteca TensorFlow.** In: *X Simpósio De Tecnologia Da Informação Da Região Norte e Nordeste do Rio Grande do Sul*, 2018, Erechim, RS.
- **Dagostini, J.; Tonin, N. A. (2016) URI Online Judge Fórum: Uma Plataforma para Compartilhamento de Conhecimento.** In: *II CONIGTI - Congresso Internacional de Gestão, Tecnologia e Inovação*, Erechim, RS: EdIFAPES, 2016. v. 1.

#### SHORT PAPERS PUBLISHED IN CONFERENCES

- **Dagostini, J.; Pinto, V., & Schnorr, L. (2021). Aplicação de Método Guloso para Balanceamento de Carga em uma Aplicação de Exploração Eletromagnética.** In: *Anais da XXI Escola Regional de Alto Desempenho da Região Sul*, (pp. 87-88). Porto Alegre: SBC. <https://doi.org/10.5753/erads.2021.14782>
- **Dagostini, J.; Lima, M. V. de M.; Bucior, L.; Bez, J. L.; Tonin, N. A. (2017) Incentivando a Aprendizagem de Algoritmos Através do URI Online Judge Forum 2.0** In: *XXVIII Simpósio Brasileiro de Informática na Educação (Brazilian Symposium on Computers in Education)*, Recife, 2017. v. 1. p. 1781. <http://dx.doi.org/10.5753/cbie.sbie.2017.1781>

## SKILLS

### ENVIRONMENTS

- Working proficiency: Linux/Unix | nano | bash | git | Docker and LXC containers | LaTeX;
- Basic proficiency: spack | slurm | vi.

### PROGRAMMING LANGUAGES

- Working proficiency: C | C++ | Python | PHP | HTML/CSS;
- Basic proficiency: Java | JavaScript | Ruby | R.

### APIs AND FRAMEWORKS

- Working proficiency: CUDA | OpenMP | CakePHP | Score-P;
- Basic proficiency: MPI | POSIX Threads | OpenACC.

### GENERAL SKILLS

- Abilities with leadership and teamwork;
- Experience with teaching algorithms to new programmers;
- Knowledge of teaching didactics (High School with disciplines for teaching degree).

## PRESENTATIONS AND INVITED TALKS

### INVITED TALKS

1. **Dagostini, J.; Solórzano, A. L.; Girelli, V.; Carmin, M. (2022) Special Sessions - Women in High Performance Computing.** (WHPC Affiliate Brasil - Região Sul. XXII Escola Regional de Alto Desempenho, Parana, Brasil)
2. **Dagostini, J.; Gayler, R.; Beste E. de; F ratkin, M.; Merritt, C.; Gonsiorowski, E.; Belcher, K.; Chen, D. (2021) Addressing Challenges in HPC Careers.** *Students@SC Student Programming, Supercomputing 21 Conference, St. Louis, United States*
3. **Dagostini, J.; Baptista, V.; Zhan, Y.; Leiva, F. H.; Gyawali, S.; Johnston, B.; Filingier, W. (2021) Presentation and Communication Skills.** *Students@SC Student Programming, Supercomputing 21 Conference, St. Louis, USA*
4. **Dagostini, J.; Solórzano, A. L.; Girelli, V. (2021) Por que ainda precisamos falar sobre mulheres em HPC?.** English title: *Why do we still have to talk about women in HPC?* (WHPC Affiliate Brasil - Região Sul) WSCAD Conference, Minas Gerais, Brasil
5. **Dagostini, J.; Solórzano, A. L.; Girelli, V. (2021) Latin American Women on HPC: WHPC Affiliate Brasil Região Sul.** *Latin America High Performance Computing Conference (CARLA 2021), Guadalajara, Mexico*
6. **Dagostini, J.; Solórzano, A. L.; Girelli, V. (2021) Special Session - Women in High Performance Computing.** (WHPC Affiliate Brasil - Região Sul) XXI Escola Regional de Alto Desempenho, Santa Catarina, Brasil

7. **Dagostini, J.;** Lima, M. V. de M.; Tonin, N. A. (2017) **Enseñar a programar jugando: URI Judge Online.** *WTIC, Resistencia, Argentina*
8. **Dagostini, J.;** Bez, J.L.; Tonin, N. A. (2016) **Portal URI Online Judge - Internacionalização.** 2016. *Tecnomate, Santa Fé, Argentina.*

## COMMUNITY SERVICES

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### COMMITTEE

- 2023 **ACM/IEEE SC'23 Supercomputing Conference, Denver, CO (USA)**  
Infrastructure - Wayfinding Co-Chair  
Artifact Description / Article Evaluation (AD/AE) Appendix Reviewer  
Lead Student Volunteers Reviewer
- 2023 **Women in HPC SC'23 Workshop**  
Submissions Co-Chair
- 2023 **International Conference on Parallel Computing**  
Reproducibility Committee
- 2022 **Women in HPC SC'22 Workshop**  
Submissions Co-Chair
- 2022 **29th IEEE Hot Interconnects Symposium**  
Web Chair
- 2019 **X Simpósio de Tecnologia da Informação da Região Norte e Noroeste do Rio Grande do Sul  
XXIII Semana Acadêmica do Curso de Ciência da Computação da URI Erechim.**  
Universidade Regional Integrada do Alto Uruguai e das Missões - URI Erechim, Brazil  
Member of the Organizer Team
- 2019 **IX Simpósio de Tecnologia da Informação da Região Norte e Noroeste do Rio Grande do Sul  
XXII Semana Acadêmica do Curso de Ciência da Computação da URI Erechim.**  
Universidade Regional Integrada do Alto Uruguai e das Missões - URI Erechim, Brazil  
Member of the Organizer Team
- 2019 **III Engenharia em 24 Horas: o desafio.**  
Universidade Regional Integrada do Alto Uruguai e das Missões - URI Erechim, Brazil  
Member of the Organizer Team

### EXTERNAL REVIEWER

- 2022 – Present **Parallel Computing Journal**

## TUTORIALS AND SHORT TERM COURSES

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- May, 2022 **Orquestrando Containers com Docker e LXC**  
Cursos de Outono 2022  
Short Term Course
- Apr, 2021 **Are you Root? Experimentos Reprodutível em Espaço de Usuário**  
XXI Escola Regional de Alto Desempenho da Região Sul  
Short Term Course
- Oct, 2020 **Introdução a Programação Paralela com OpenMP**  
I Semana Acadêmica Integrada dos Cursos de Ciência da Computação da URI  
Short Term Course

## VOLUNTEER EXPERIENCE

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- Nov,2022 – Present **SC'23 Wayfinding Co-Chair**  
 ACM/IEEE SC'23 Supercomputing Conference, Denver (USA)  
 Principal Activities:
- Co-chair of Wayfinding Committee, responsible for the general information to attendees in the conference (info booth).
  - Reviewer of Artifact Description / Article Evaluation (AD/AE) Appendix and the Lead Student Volunteers submissions.
- May,2022 – Present **Women in HPC SC Workshop Submissions Co-Chair**  
 Women in HPC SC'22 & SC'23 Workshop  
 ACM/IEEE SC'22 Supercomputing Conference, Dallas (USA)  
 ACM/IEEE SC'23 Supercomputing Conference, Denver (USA)  
 Principal Activities:
- Co-chair of Lightning Talk Submissions for the Women in HPC Workshop
- Jan,2021 – Present **Women in HPC Affiliate Brasil - Região Sul**  
 Co-Founder of the Women in HPC Affiliate Brasil - Região Sul.  
 First representation of WHPC Global in Latin America.
- Jan,2022 – May,2023 **Hot Interconnects 2022 Web Chair**  
 Responsible for the web development and design of the Hot Interconnects 2022 web page.
- Jan,2022 – Dec,2022 **BRASA PRÉ Pós-Graduação Mentor**  
 Mentor of a Brazilian student for the application process for graduate schools in USA.
- Mar,2022 – Nov, 2022 **Selected SCALE Student Volunteer**  
 Lead Student Volunteer  
 ACM/IEEE SC'22 Supercomputing Conference, Dallas (USA)  
 Principal Activities:
- Lead Volunteer at Infrastructure Committee (Wayfinding)
- Apr,2022 **Volunteer Staff**  
 2022 International Collegiate Programming Contest  
 South America/Brazil Finals  
 Principal Activities:
- Help with general organization and coordination in the whole final contest event.
- Mar,2021 – Nov, 2021 **Selected SCALE Student Volunteer**  
 Student Committee Apprenticeship and Leadership Experience  
 ACM/IEEE SC'21 Supercomputing Conference, St. Louis (USA)  
 Principal Activities:
- Student Volunteer at Communication Committee
  - Updates on social media from Students@SC Program
- Nov,2020 **Selected Regular Student Volunteer**  
 ACM/IEEE SC'20 Supercomputing Conference, Atlanta (USA)
- May,2015 – Aug,2017 **Volunteer Member**  
 Rotaract Club Erechim Paiol Grande - Rotaract Club recognized by the Rotary International