Giselle **Sosa Jones**

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Education

University of Waterloo — *Waterloo, Canada*
PH.D. IN APPLIED MATHEMATICS — *Sep. 2016 - Aug. 2020*
Supervisor: Dr. Sander Rhebergen
Project: Space-time hybridizable discontinuous Galerkin methods for free-surface problems (Link to thesis)

Simón Bolívar University — *Caracas, Venezuela*
MASTER OF SCIENCE IN MATHEMATICS (GRADUATED WITH HONORS) — *Apr. 2013 - Jan. 2016*
Supervisors: Dr. Oswaldo Jiménez and Dr. Jhonnathan Arteaga
Project: Mimetic methods for welding plate problems

Simón Bolívar University — *Caracas, Venezuela*
B.SC. IN COMPUTATIONAL MATHEMATICS AND STATISTICS (5-YEAR-LONG DEGREE) — *Sep. 2007 - Mar. 2013*

Research Interests

Numerical analysis, scientific computing, discontinuous Galerkin methods, coupled problems, free-surface problems, PDEs on time-dependent domains.

Experience

Department of Mathematics, University of Houston — *Houston, USA*
POSTDOCTORAL RESEARCH ASSOCIATE/LECTURER — *Oct. 2020 - Present*

Department of Applied Mathematics, University of Waterloo — *Waterloo, Canada*
PH.D. CANDIDATE/TEACHING ASSISTANT — *Sep. 2016 - Aug. 2020*

Department of Scientific Computing and Statistics, Simón Bolívar University — *Caracas, Venezuela*
TEACHING/RESEARCH ASSISTANT — *Apr. 2013 - Apr. 2016*

Institute for Advanced Studies in Administration (IESA) — *Caracas, Venezuela*
TEACHING ASSISTANT — *Apr. 2014 - Dec. 2015*

Energy Institute of Simón Bolívar University (INDENE) and Foundation for the Development of the Electric Service (FUNDELEC) — *Caracas, Venezuela*
SCIENTIFIC SOFTWARE DEVELOPER — *Sep. 2014 - Aug. 2016*

Energy Institute of Simón Bolívar University (INDENE) and Ministry of Electric Energy — *Caracas, Venezuela*
SCIENTIFIC SOFTWARE DEVELOPER — *Sep. 2015 - Dec. 2015*

Publications

Peer-reviewed

G. Sosa Jones, S. Rhebergen, *"An interface-tracking space-time hybridizable/embedded discontinuous Galerkin method for nonlinear free-surface flows"*. *2021*
Submitted.

G. Sosa Jones, B. Riviere, L. Cappanera, *"Existence and convergence of a discontinuous Galerkin method for the compressible three-phase flow problem in porous media"*. *2021*
Submitted.

G. Sosa Jones, J.J. Lee, S. Rhebergen, *"A space-time hybridizable discontinuous Galerkin method for linear free-surface waves"*. *2020*
Journal of Scientific Computing, 85/61, https://doi.org/10.1007/s10915-020-01340-8

G. Sosa Jones, J. Arteaga, O. Jiménez, *"A study of mimetic and finite difference methods for the static diffusion equation"*. *2018*
Computers & Mathematics with Applications, 76/3, pp 633-648.
https://doi.org/10.1016/j.camwa.2018.05.004

S. Buitrago, **G. Sosa Jones**, O. Jiménez, *"An Upwind Finite Volume Method on Non-Orthogonal Quadrilateral Meshes for the Convection Diffusion Equation in Porous Media"*. *2015*
Applicable Analysis: An International Journal (Taylor & Francis Production), 95/10, pp 2203-2223. http://dx.doi.org/10.1080/00036811.2015.1064520

Conference proceedings

G. Sosa Jones, S. Buitrago, O. Jiménez, *"Numerical solution of the convection-diffusion equation using finite volumes on nonorthogonal quadrilateral meshes" (In Spanish)*. *2014*
Proceedings of the XII Congreso Internacional de Métodos Numéricos en Ingeniería y Ciencias Aplicadas, ISBN: 978-980-7161-04-6, PP TCA-43 to TCA-48.

Presentations

CAAM Colloquium, Rice University *Houston, USA*
A space-time hybridizable discontinuous Galerkin method for linear and nonlinear free-surface waves *(Invited)* *November, 2021*

4th Annual Meeting of the SIAM Texas-Louisiana Section *South Padre Island, USA*
Existence and convergence of a discontinuous Galerkin method for three phase flows in porous media *(Invited)* *November, 2021*

Numerical Analysis Seminar, Texas A&M University *College Station, USA*
A space-time hybridizable discontinuous Galerkin method for linear and nonlinear free-surface waves *(Invited)* *October, 2021*

SIAM Great Lakes Section Annual Meeting *Virtual*
A space-time hybridizable discontinuous Galerkin method for linear and nonlinear free-surface waves *April, 2021*

PDE Seminar, Department of Mathematics, University of Houston — *Virtual*
A space-time hybridizable discontinuous Galerkin method for free-surface waves — *February, 2021*

3rd Annual Meeting of the SIAM Texas-Louisiana Section — *Virtual*
A Space-Time Hybridizable Discontinuous Galerkin Method For Linear Free-Surface Waves *(Invited)* — *October, 2020*

Canadian Applied and Industrial Mathematics Society (CAIMS) Anual Meeting — *Toronto, Canada*
Hybridizable Discontinuous Galerkin Methods for Linear Free Surface Problems — *June, 2018*

SIAM Great Lakes Section Annual Meeting — *Detroit, USA*
Hybridizable Discontinuous Galerkin Methods for Free Surface Problems — *April, 2018*

Southern Ontario Numerical Analysis Day — *Toronto, Canada*
Hybridizable Discontinuous Galerkin Methods for Linear Free Surface Problems — *May, 2018*

XII International Congress of Numerical Methods in Engineering and Applied Sciences — *Margarita Island, Venezuela*
Numerical solution of the convection-diffusion equation using finite volumes on nonorthogonal quadrilateral meshes — *2014*

IX International Colloqium in Statistics — *Medellin, Colombia*
Predictibility and risk in complex time series — *2012*

Teaching Experience

Department of Mathematics, University of Houston — *Houston, USA*
Linear Algebra — *Spring - Fall 2021*

Department of Applied Mathematics, University of Waterloo — *Waterloo, Canada*
Linear Algebra for Engineering — *Fall 2019*

Department of Scientific Computing and Statistics, Simón Bolívar University — *Caracas, Venezuela*
Scientific Computing for Engineering — *Summer 2016*

Honors & Awards

2020	University of Waterloo Doctoral Thesis Completion Award	*Waterloo, Canada*
2020	University of Waterloo Graduate Scholarship for excellent academic record	*Waterloo, Canada*
2019	University of Waterloo Applied Mathematics Outstanding Teaching Assistant Award	*Waterloo, Canada*
2018	Scholar at the International HPC Summer School on HPC Challenges in Computational Sciences (fully funded by SciNet, Canada)	*Ostrava, Czech Republic*
2016	University of Waterloo Provost Doctoral Entrance Award for Women	*Waterloo, Canada*

Technical skills

- **Expert**: MATLAB, MFEM, deal.II
- **Advanced**: C, C++, Python, Microsoft Office
- **Basic**: Git, Linux, MPI, PyQt, PostgreSQL

Languages

- **English**: full professional proficiency
- **Spanish**: native language