GARCIA HILARES, NILTON ALAN

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EDUCATION

Ph.D. Virginia Tech, Mathematics   May 2023
Topic: Mathematical Modeling and Dynamic Recovery of Power Systems
Advisor: Mark Embree

MS Virginia Tech, Mathematics   May 2019
Thesis: "A parallel aggregation algorithm for inter-grid transfer
operators in algebraic multigrid"
Advisor: Mark Embree

MS UNMSM, Matemática aplicada con mención en matemática   Aug. 2014
Computational (Applied mathematics with a mention in computational
mathematics)
Thesis: "Analysis and simulation of a mathematical model for bone
tumor treatment and its influence on bone remodeling cycle"
Advisor: Roxana Lopez-Cruz
Country: Peru

BS UNMSM, computación científica (Scientific Computing)   Aug. 2010
Thesis: Image processing based on Wavelet analysis
Advisor: Victor R. Cabanillas-Zanini
Minored in Mathematics
Country: Peru

HONORS AND AWARDS

Lee R. Steeneck & Regina Aultice Steeneck Graduate Fellowship   2019
Award for graduate students attending Virginia Polytechnic Institute
& State University (Virginia Tech) who are majoring in Mathematics.

COMPUTER SKILLS

Programming languages: **Matlab, C/C++, OpenMP, MPI, Python, Java, OpenGL**

RESEARCH EXPERIENCE

Virginia Tech, VA   Spring 2022
Graduate Research Assistant, Department of Mathematics
Project: Recovering Power systems dynamic from data using dynamic mode decomposition (DMD) and least square fitting.

Virginia Tech, VA   Summer I/II 2021
Graduate Research Assistant, Department of Mathematics
Project: Analyzing the matrix pencil index for the linearized swing equation.
Project: Bounding singular value using the Zolotarev number for Loewner matrices

Virginia Tech, VA   Spring 2021
Graduate Research Assistant, Department of Mathematics
Project: Bounding singular value using the Zolotarev number for Loewner matrices.

Virginia Tech, VA   Summer I/II 2020
Graduate Research Assistant, Department of Mathematics
Project: Analyzing the backward stability of the Sakurai-Sugiura algorithm to compute eigenvalues by contour integrals.

Virginia Tech, VA   Fall 2019
Graduate Research Assistant, Department of Mathematics
Project: Algebraic multigrid as a preconditioner for the Poisson's equation.

TEACHING EXPERIENCE

Virginia Tech, VA   Aug 2016 to Spring 2020
Graduate Teaching Assistant, Department of Mathematics
- Courses Taught: Calculus of single variable (Math 1225), Calculus of a single variable II (Math 1226), Elementary calculus for life science (Math 1026), Elementary calculus with matrices (Math 1526)

Virginia Tech, VA   Fall 2020 to Spring 2023
Graduate Teaching Assistant, Computational Modelling and Data Analytics (CMDA) program
- Teaching Assistant: Computer science foundations for computational modeling & data analytics (CMDA/CS 3634)

PRESENTATIONS AND INVITED LECTURES

Presentation: "Dynamic recovery for power networks using DMD"
Applied and Numerical Analysis Seminar, Virginia Tech, December 2, 2022.

Poster Presentation: "Dynamic Recovery of Power Networks using Dynamic Mode Decomposition"
2022 AMPS Workshop, George Mason University, May 26, 2022.

Presentation: "An Adaptive Zolotarev Upper-Bound for the Singular Values of Loewner Matrices"
Applied and Numerical Analysis Seminar, Virginia Tech, November 12, 2021.

Presentation: Image segmentation by graph partitioning
First International Congress on Topology and Related Topics, UNMSM, Lima-Peru (virtually), October 7, 2021.

Presentation: "Lyapunov Bounds on Transient Growth for Dynamical Systems"
Applied and Numerical Analysis Seminar, Virginia Tech, November April 30, 2021.

Presentation: "Zolotarev bounds for the singular values of Loewner matrices"
Applied and Numerical Analysis Seminar, Virginia Tech, November 20, 2020.

Presentation: "The Sakurai-Sugiura algorithm: A projection method for generalized eigenvalue problems using numerical integration"
SIAM seminar, Virginia Tech, November 18, 2019.

PROFESSIONAL TRAINING

SIAM Conference on Computational Science and Engineering (CSE21)
Held virtually, March 1 - 5, 2021.

SIAM Conference on Applied Linear Algebra (LA21)
Held virtually, May 17 - 21, 2021.

SIAM Annual Meeting (AN21) held jointly with SIAG Conferences ACDA21, CT21, DM21, and OP21
Held virtually, July 19 – 23, 2021.

International Workshop: "La Matemática como herramienta para entender la biología/ la Biología como fuente de problemas matemáticos"
University of Buenos Aires (UBA), Buenos Aires - Argentina, April 23-24, 2015.

PROFESSIONAL AFFILIATIONS

American Mathematic Society (AMS)
Member

Society for Industrial and Applied Mathematics (SIAM)
Member

LANGUAGES

Spanish: Native Language

English: Intermediate

REFERENCES

Dr. Mark Embree, Hamlett Professor of the Academy of Integrated Science
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