Antonio R. Vargas

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▬▬ Employment

2022-   **Senior Data Scientist**, *Recast*, getrecast.com.

2019-2022   **Research Analyst, Division of Financial Regulation**, *Oregon Department of Consumer and Business Services*, Salem, Oregon.

2018-2020   **Statistician**, *NeuroMeditation Institute, LLC*, Eugene, Oregon.
I assisted in studying moods and meditative states using brain wave data. I was involved in aspects of research study design, data wrangling, statistical modeling, and the reporting of research findings.

2016-2017   **Postdoctoral Researcher, Mathematics Department**, *Katholieke Universiteit Leuven*, Leuven, Belgium.
My primary duty as a postdoc was to perform fundamental mathematical research. In addition to this I taught a 3rd year semester-long course on Complex Analysis, gave talks about my research in the department's seminar, and attended mathematics conferences in Belgium and abroad.

2012, 2014–2016   **Teaching assistant**, *Dalhousie University*, Halifax, Nova Scotia.
As a teaching assistant I lead once- or twice-weekly problem solving sessions for groups of 40-50 students in various calculus classes. I prepared and presented solutions to problems chosen by the instructors of those classes. I was also responsible for grading my students' midterms.

2011–2014   **Scheduled tutor in the Mathematics Learning Centre**, *Dalhousie University*, Halifax, Nova Scotia.
During my shifts as a scheduled tutor, students could approach my table in the Learning Centre to get help with their assignments or lessons.

▬▬ Education

2012–2016   **Doctor of Philosophy, Mathematics**, *Dalhousie University*, Halifax, NS, Canada, supervised by Karl Dilcher.
Thesis: *Scaling Limits for Partial Sums of Power Series*
Available online at `https://arxiv.org/abs/1610.03387`

2011–2012   **Master of Science, Mathematics**, *Dalhousie University*, Halifax, NS, Canada, supervised by Karl Dilcher.

2006–2010   **Bachelor of Arts, Mathematics**, *California State University, Fullerton*, Fullerton, CA, USA.

Publications

2020 **Fixed points of diffeomorphisms on nilmanifolds with a free nilpotent fundamental group**, with Karel Dekimpe and Sam Tertooy, *Asian Journal of Mathematics*, volume 24, issue 1, pages 147–164.
https://dx.doi.org/10.4310/AJM.2020.v24.n1.a6
https://arxiv.org/abs/1710.09662

2019 **The Saff-Varga Width Conjecture and entire functions with simple exponential growth**, *Constructive Approximation*, volume 49, issue 2, pages 307–383.
https://link.springer.com/article/10.1007/s00365-018-9422-x
https://mathstat.dal.ca/~antoniov/vargas-widthconjecture.pdf

2014 **Limit curves for zeros of sections of exponential integrals**, *Constructive Approximation*, volume 40, issue 2, pages 219–239.
https://link.springer.com/article/10.1007/s00365-014-9241-7
https://arxiv.org/abs/1302.3695

2013 **Zeros and convergent subsequences of Stern polynomials**, *Journal of Mathematical Analysis and Applications*, volume 398, issue 2, pages 630–637.
http://www.sciencedirect.com/science/article/pii/S0022247X12007676
https://arxiv.org/abs/1202.4110

2009 **Interlacing and non-orthogonality of spectral polynomials for the Lamé operator**, with Alain Bourget and Tyler McMillen, *Proceedings of the American Mathematical Society*, volume 137, issue 5, pages 1699–1710.
http://www.ams.org/journals/proc/2009-137-05/S0002-9939-08-09811-0/

Invited talks

2015 **Newman-Rivlin asymptotics for partial sums of power series**,
Classical analysis seminar, Departement Wiskunde, Katholieke Universiteit Leuven.
Leuven, Belgium

2015 **Newman-Rivlin asymptotics for partial sums of power series**,
13th International Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSFA-13), National Institute of Standards and Technology.
Gaithersburg, MD, USA

Posters

2012 **Zeros of sections of some power series**, *Four Faces of Number Theory*, summer school at Universität Würzburg.
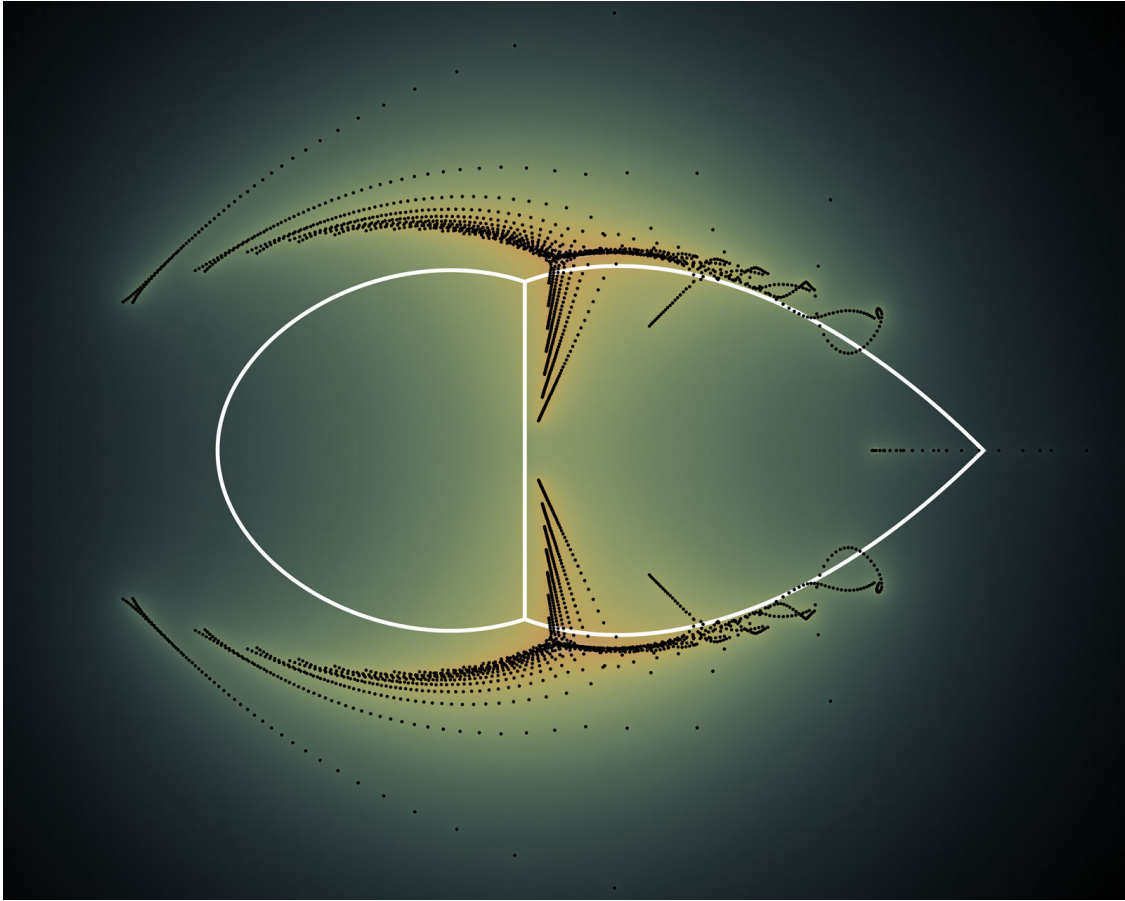Würzburg, Germany

Software I use

analysis software	R, Stan, Mathematica	**programming languages**	Python, JavaScript
office software	LaTeX, Microsoft suite	**databases**	SQL

2014 **Cover image, Science As Art Calendar**, *chosen by popular vote.*
Calendar produced by the Dalhousie University Faculty of Science

"Zeros of Partial Sums of a Power Series"
These zeros behave wildly, producing intricate patterns as they cluster around their white limit curve.