Carlos Salinas

Address: 7507 Camelot Dr, Mission, TX 78572
Mobile: (765) 337-9606
E-mail: cemiliosal@gmail.com, salinac@purdue.edu

OBJECTIVE

ABD PhD student in theoretical mathematics. Experience in research mathematics, wavelet image compression, and neural networks. Very fast learner. Fluent in Spanish and Russian, conversational in Persian. Advanced knowledge of Python, R, and (Postgre)SQL. Very interested in foreign languages and cultures.

EDUCATION

Master of Science, Mathematics — August 2020
Purdue University, West Lafayette, IN
GPA 3.73

Bachelor of Science, Mathematics — May 2014
University of Texas–Pan American, Edinburg, TX
GPA 3.86

SKILLS

Programming languages: Python, Matlab/Octave, C++, C, R, Java, Common Lisp
Python packages: numpy, scikit-learn, matplotlib, pandas, keras, spaCy
R packages: ggplot, tidyverse, tidymodels, dplyr, forcats, modelr, shiny
Misc. software: Emacs, Vim, SQL, Git, Latex, Mathematica, LibreOffice, Google Docs
Operating systems: Linux (Debian, Fedora), FreeBSD, Windows
Languages: English (native), Spanish (native), Russian (fluent), Persian (conversant)

RELEVANT EXPERIENCE

Graduate Student/Teaching Assistant — August 2014-May 2020
Department of Mathematics, Purdue University, West Lafayette, IN

- Led two to three recitation sections per semester for Purdue's undergraduate level math courses including Calculus 1, 2, 3, and Differential Equations/Linear Algebra.
- Analyzed students' performance on homework, quizzes, and midterms with Libreoffice's Cal (an open-source clone of MS Excel).
- Graded and designed homework/quizzes for undergraduate linear algebra as well as the graduate level Advanced Mathematics for Engineers.
- Maintained a university associated website to which I uploaded relevant course material such as quiz and homework solutions, recitation notes, and quiz and midterm statistics, cut-off ranges.
- Studied the properties of finite quotients of finitely generated nilpotent groups.
- Studied the zeta function associated to finite quotients of the free nilpotent group and wrote code in Sage to compute coefficients its coefficients.

Experimental Algebra & Geometry Lab System Admin/Research Assistant — September 2013-May 2014
University of Texas–Pan American, Department of Mathematics, Edinburg, TX

- Managed the Geometry Lab's Fedora cluster.
- Maintained an operational CUDA computing workstation for carrying out numerical simulations and experiments.
- Kept the lab's 3D printer in tip-top shape by updating its software, cleaning extruder residue from the nozzle, and replacing and ordering filament.
- Engaged with local schools in math and geometry related outreach activities.
- Performed in several skits for Dr. Lawton's *Your Teachers Are Lying To You!* outreach program.
- Wrote an algorithm in Mathematica to study the trace of representations in character varieties taking advantage of the cyclic property of the trace operator.
- Discovered a correspondence between so-called 2-special pairs and pairs of orientable necklaces.
- Published the associated sequence in the On-line Encyclopedia of Integer Sequences under A237623.
- Presented results at Howard University's Workshop on Character Varieties and Geometric Structures.