Ignacio Mariano Sticco

Physicist & Data Scientist

Contact info

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Email:
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Nationality:
Argentina

Personal web page (extended CV):

https://ignaciosticco.github.io/

Languages

Spanish (native)
English (B2 level)

Programming

Python (Pandas, Numpy, Scipy, etc.)
Matlab
C++
LAMMPS
Linux
Git
Latex

About me

I hold a Bachelor's degree in Physics, and I am currently a part-time university professor while completing my Ph.D. in Physical Sciences at the University of Buenos Aires. The goal of my Ph.D. is to optimize a mathematical model for emergency evacuations and propose solutions for these evacuations. Throughout my academic career, I have gained extensive knowledge in predictive models, statistics, programming, artificial intelligence, and data science. I am interested in leveraging this expertise to apply Machine Learning to solve high-impact problems.

Education

Ph.d. in Physics *Facultad de Ciencias Exactas y Naturales (UBA)*, 2018 -2023 (about to finish)

Licenciatura in Physics, *Facultad de Ciencias Exactas y Naturales (UBA)*, 2010 -2016.

Work experience

1) Doctoral Fellow *(Conicet) -* 2018- Present

- Conducted a comprehensive literature review in my field of research

(active learning).

- I developed computer programs to simulate emergency crowd evacuations, using C++ for the back-end and LAMMPS for the front-end.

- To analyze and visualize the results from numerical simulations, I primarily used Python, including popular packages such as Pandas, Numpy, Matplotlib, Pylab, Trackpy, and Sys. In some cases, I also utilized Matlab and Excel for additional analyses.

- I Implemented an evolutionary algorithm (artificial intelligence) from scratch to optimize the parameters of a model.

- Developed challenging tasks that required critical thinking and creativity. These tasks helped me further refine my expertise and better understand the intricacies of my field of research.

2) Professor in *UADE (university level) -* 2021- Present

- Taught courses in General Physics and Electricity and Magnetism for engineering students.
- Led courses with over 50 students.
- Prepared and delivered classes in both in-person and virtual formats.
- Prepared and evaluated partial and final exams.
- Prepared and led laboratory hands-on sessions.
- Responded to student inquiries both in person and virtually.

Knowledge

Statistics
Physics
Math

Skills

Data analysis
Programming
Research
Data visualization
Data wrangling
Communication
Critical thinking
Creativity
Teaching
Continuous learning

Interests

Artificial Intelligence
Science & Technology
Economy
Debating
Swimming & Gym
Cooking

3) Data Scientist in *Futbol Sites Network* – 2018

- Use KPIs to quantify the performance of different websites.
- Create dashboards to report important metrics to other members of the company.
- Use Datorama, Google Analytics, Excel, and SQL.
- Found interesting patterns of user behavior.
- Extracted valuable data from JSON files.
- Linear regressions and measures of correlation.
- Time series and fluctuation analysis.

4) Professor in *FCEN, UBA (university level)* - 2017 – 2018

Peer-reviewed journal articles

I wrote and published 9 scientific papers in top-tier indexed journals.

Highlighted paper:

Social force model parameter testing and optimization using a high stress real-life situation

I.M. Sticco, G.A. Frank, C.O. Dorso, Physica A, 2020

In this paper, I extracted empirical data that resembles an emergency evacuation scenario. I tested a pedestrian dynamic model using different parameters proposed in scientific literature. Then, I developed an evolutionary algorithm to find a parameter set that fits the simulation model to the empirical data.

For more information, please refer to my Google Scholar profile:

https://scholar.google.com/citations?user=Rb_GO6oAAAAJ&hl=en

Data Science portfolio

(see my personal website for more details: https://ignaciosticco.github.io)

- NLP for Google maps reviews
- Hand Digit recognition (Neural Network)

Courses

7th Workshop on Collaborative Scientific Software Development, *ICTP Trieste (Italia),* 2019

Machine Learning, *Stanford University (Coursera),* 2018

Learning how to learn, UC San Diego (Coursera), 2015

First Certificate in English (B2), Cambridge, 2009