# Miguel Ángel Sánchez Cortés

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BSc. in Physics | Data Scientist

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Miguel Ángel Sánchez Cortés (26 years old) is a high performance Physics Bachelor and Data Scientist from Mexico with experience and interest on several areas of research including Complex Systems, Social Data Science, Network Science and Machine Learning. Top student with data-handling and programming skills with great interest on the frontiers of Interdisciplinary Science and Complexity Science.

## EDUCATION

**Master of Science in Data Science**                                                                   2023-Present
*Sapienza Università di Roma (Sapienza University of Rome)*
Rome, Italy. In progress.
GPA: 29.5/30

**Bachelor of Science in Physics**                                                                         2016-2021
*Universidad Nacional Autónoma de México (National Autonomous University of Mexico)*
Mexico City, Mexico. 100% completed.
GPA: 9.51/10.

**High School Degree in the Physics-Mathematics and Engineering Area**                                     2012-2015
*Centro Universitario México (University Center Mexico)*
Mexico City, Mexico. 100% completed.
GPA: 8.03/10.

## RESEARCH EXPERIENCE

**Research Internship**                                                        September 2021 —December 2021
*Dept. of Economics & Dept. of Physics and Astronomy*                                          *Ghent, Belgium*
*Ghent University*

- 3 month research internship on Network Science focused on Social Networks, Community Analysis and Multilayer Networks. The project was used as an undergraduate thesis.
- Experience in Python programming for Web Scraping, Network Modeling & Computer Simulations. Among the main libraries and tools used are: Pandas, Matplotlib, BeautifulSoup, NetworkX & MFinder for motif analysis.
- Main topic of the project: Analyzing data of the Eurovision Song Contest and building the voting network to perform community analysis and to simulate the voting mechanism using a Weighted Multilayer Network model.

**Professional Practices**                                                        August 2020 — June 2021
*Dept. of Quantum Physics & Photonics, Institute of Physics*                         *Mexico City, Mexico (Remote)*
*National Autonomous University of Mexico*

- Undergraduate professional practices focused in obtaining research experience on concepts like Rank Diversity, Power Laws, Probability Density Functions and Critical Phenomena on Natural & Social Sciences. Research developed using Wolfram Mathematica for computer simulations and probabilistic analysis.
- Main topic of the project: Simulating the Rank Dynamics of an urn with n balls using a Random Walk-like model and implementing a theoretical framework to further analyze and fit the model to real data.

**Research Internship**                                                          January 2019 — January 2020
*Dept. of Complex Systems, Institute of Physics*                                               *Mexico City, Mexico*
*National Autonomous University of Mexico*

- Undergraduate opportunity financed by the National Council of Science and Technology (CONACYT). The main objective of the internship was learning and obtaining research experience on the Theory of Complex Systems, Zipf-like Power Laws and the applications of Rank-Ordering Statistics in Natural Phenomena like earthquakes and hurricanes.
- Hands on experience on HTML and Machine Learning used for classification of signals.

## PROFESSIONAL EXPERIENCE

**Data Scientist & Founding Team Member**                                            March 2022 — Present
*Vivanta*                                                                           *Mexico City, Mexico (Remote)*

- Obtention and analysis of health and wellness data from wearable devices (phones, smartwatches, etc.). Among my tasks are building AWS Lambdas to obtain health data from wearables and developing Data Science projects to gain insights from this data. For more information, please refer to Vivanta.
- Hands on experience retrieving data from API's, PostgreSQL for Databases, Object-Oriented programming with Python, Amazon Web Services (S3, EC2, SageMaker) and Machine Learning Tools (Clustering, Neural Networks, etc.)

## SKILLS

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|---|---|
| **Advanced programming** | **Python** for Data Science (Jupyter Notebooks, Pandas, Sklearn, Matplotlib, etc.), Machine Learning (Pytorch, Keras), and Network Science (NetworkX) & **R** for Statistics (Monte Carlo Simulations, Data Visualization & iGraph) |
| **Basic programming** | **Wolfram Mathematica** (Basic Simulations & Plotting) & **C++** (Basic Programming). |
| **Languages** | **English:** C1 level certified with TOEFL iBT (Score: 109/120), **Italian:** C1 level uncertified & **Spanish:** Mother tongue. |
| **Other tools** | LaTeX, Git, PostgreSQL, Shell, AWS, Gephi & Microsoft Office. |