

ARIEL WERLE

DATA SCIENTIST | ASTROPHYSICIST

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SKILLS

PROGRAMING AND SCRIPTING

Python | SQL | Bash | R | MATLAB | Fortran

DATA ANALYSIS AND VISUALIZATION

Pandas | pySpark | SciPy | Matplotlib | Plotly | Dash | Seaborn | Streamlit | Superset

MACHINE LEARNING AND AI

Scikit-Learn | Keras | TensorFlow | MCMC | XGBoost

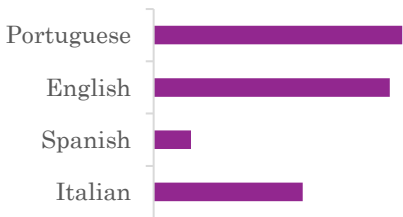
VERSION CONTROL SYSTEMS

Git | GitHub | Bitbucket

OTHER

Linux | Latex | Markdown | Qt | Docker | Slurm | PyPi

LANGUAGES



TEACHING EXPERIENCE

ALTERNANZA SCUOLA-LAVORO

Bayesian inference of galaxy properties for high-school students. [GitHub page](#).

ASTRONOMICAL DATABASES AND ASTROSTATISTICS IN THE ERA OF BIG DATA

SQL and ADQL for astronomy databases.

LA PLATA INTERNATIONAL SCHOOL ON ASTRONOMY AND GEOPHYSICS

Introduction to python and data visualization. [GitHub page](#).

MATH AND PHYSICS TUTORING

Tutored over a hundred students from 2011 to 2016.

COURSES AND WORKSHOPS

- Data science career track | Datacamp
- Machine Learning with Python | Coursera
- Big data within science and industry | Milano-Bicocca University
- Data-driven astronomy | Coursera

ABOUT ME

I am a **PhD. in astrophysics** with five years of postdoctoral research experience; I work as a **data scientist** in the oil and gas industry. I have sharp **data intuition** and a vast knowledge of **machine learning** and **data analytics**.

EXPERIENCE

DATA SCIENTIST | PIPESURVEY INTERNATIONAL

SEPTEMBER 2024 – PRESENT

- Developed **machine learning models** for the non-destructive detection of gas pipeline defects, guiding maintenance strategies with an 86% success rate.
- Built **data analysis tools** for process automation, decreasing typical workflow times by 80%.

SCIENTIFIC RESEARCHER | INAF

MARCH 2020 – AUGUST 2024

- Led the development of a new classification method for **hyperspectral imaging** of galaxies based on **CNNs**, reducing false positives to 0.5%.
- Led the application of **Bayesian inference** models for the determination of physical parameters.
- Participated in **over 30 publications** in scientific journals.

TECHNICAL ASSISTANT | UNIVERSITY OF SÃO PAULO

MARCH 2019 – FEBRUARY 2020

- Developed **data processing pipelines** for one million objects in the **S-PLUS** astronomical survey.
- Trained models for **object classification** using Random Forrest and ANNs.

TEACHER | FEDERAL UNIVERSITY OF SANTA CATARINA

AUGUST 2014 – MARCH 2015

- Teaching entry-level undergraduate **mathematics courses** with an overwhelmingly positive evaluation by students.

EDUCATION

PHD. IN PHYSICS | FEDERAL UNIVERSITY OF SANTA CATARINA

2015 – 2019

Thesis: [Analysis of SDSS Spectra and GALEX Photometry with STARLIGHT: Stellar Populations and Dust in Local Galaxies](#)

- Updated a **spectral decomposition** code based on **MCMC** (see [user guide](#)).
- Performed **numerical modelling** and **statistical data analysis** for a sample of 230 thousand galaxy spectra.
- Developed **python wrappers** for Fortran legacy code (see [repository](#)).

MSC. IN PHYSICS | FEDERAL UNIVERSITY OF SANTA CATARINA

2012 – 2014

Thesis: Post-Starburst Galaxies in the Local Universe

- **Classification** and **statistical analysis** in large databases.

LIC. IN PHYSICS | FEDERAL UNIVERSITY OF SANTA CATARINA

2007 – 2011

SCIENTIFIC PUBLICATIONS

See list of publications: [ADS](#) | [ORCID](#)

