

# Ariel Werle

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## SUMMARY

Data scientist with a PhD in astrophysics, experienced in delivering end-to-end machine learning solutions. Skilled in statistical modeling, deep learning, and data pipeline development across research and industrial settings.

## PROFESSIONAL EXPERIENCE

### DATA SCIENTIST

Pipesurvey International

September 2024 – Present  
Zwijndrecht, The Netherlands

- Developed machine learning solutions 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

National Institute of Astrophysics

March 2020 – August 2024  
Padova, Italy

- 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 of star-forming regions.
- Participated in over 35 publications in scientific journals.

### TECHNICAL ASSISTANT

University of São Paulo

March 2019 – February 2020  
São Paulo, Brazil

- Developed data processing pipelines for one million objects in the S-PLUS astronomical survey.
- Trained and validated classification models to identify astronomical objects.

## EDUCATION

Federal University of Santa Catarina

PhD. in Astrophysics

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 and developed python wrappers.
- Performed numerical modelling and statistical data analysis for a sample of 230 thousand galaxy spectra.

MSc. in Astrophysics

2012 – 2014

Thesis: Post-Starburst Galaxies in the Local Universe

- Classification and statistical analysis in large databases.

BSc. in Physics

2007 – 2011

## SKILLS

Programming and Scripting

Python • SQL • Bash • R • MATLAB • JavaScript

Data Science

Scikit-Learn • TensorFlow • MCMC • XGBoost • Bayesian Inference • Pandas • Spark • SciPy • Plotly • Dash • Seaborn • Streamlit • Databricks • OpenAI

Other

Git • Linux • Docker • Latex • Qt • GitHub Actions

## BONUS POINTS

- Languages: English (fluent), Portuguese (native), Italian (fluent), Spanish (basic), currently studying Dutch.
- 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).
- Vast experience in teaching and tutoring students in math and physics.