

Joaquín Hernández-Yévenes

ASTRONOMER – DATA ANALYST – DATA SCIENTIST

Based in Talcahuano, Chile

BSc and MSc in Astronomy from Universidad de Concepción

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Summary

Astronomer with a strong background in research and expertise in developing the WISE2MBH algorithm for precise black hole mass estimation. Possess extensive research experience, including a productive research internship at Harvard University's Black Hole Initiative, showcasing adept problem-solving and goal-oriented skills. Demonstrated success with great programming and analysis skills used to develop Python scripts for modification and maintenance of the ETHER sample, and multiple accepted observational proposals.

As a dedicated educator, served as a teaching assistant for astronomy courses and founded/managed a student support community, highlighting effective communication and leadership skills. Skilled in Python and various data analysis tools, backed by a varied portfolio of data projects and certifications in machine learning, data analysis, and cloud computing. Fluent in both Spanish and English, bringing a unique combination of academic prowess, research proficiency, analytic excellence, and great communication skills.

Experience

Data Analyst

UNIVERSIDAD DE CONCEPCIÓN

Concepción, Chile

Feb. 2024 - Present

- **Established a robust pipeline** for consistent generation of new versions of the ETHER sample.
- **Consolidated small scripts into a unified infrastructure** and **conducted analysis on various methods** to estimate black hole masses, considering comparison, systematic differences, and errors.

Technical Support

UNIVERSIDAD DE CONCEPCIÓN

Concepción, Chile

Mar. 2022 - Jan. 2024

- **Developed a simple algorithm for estimation of black hole masses** using WISE cataloged data.
- Contributed to various **publications, presentations, and the creation of observing proposals** for facilities such as ALMA and GMVA, **securing +100 hours of observing time**.

Assistantship

UNIVERSIDAD DE CONCEPCIÓN

Concepción, Chile

Aug. - Dec. 2023

- Assistant for Extragalactic Astronomy and Radioastronomy classes for 8th-semester astronomy students.
- Responsible for doing practical classes, making and evaluating homework and exams.

Research Internship

HARVARD UNIVERSITY

Cambridge, MA, USA

Mar. - Apr. 2023

- **Developed and refined WISE2MBH algorithm** at Harvard's Black Hole Initiative.
- Analyzed black hole emission models within EHT and ngEHT frameworks.
- **Developed strong leadership and communication skills** through active team participation, gaining experience in a dynamic research environment.

Co-Founder

SciCAT

Concepción, Chile

Apr 2020 - Oct. 2022

- Co-founded a non-profit educational support group, **leading content creation and material development**.
- Conducted weekly team meetings, managed community engagement on the **Instagram** and **YouTube** page, and initiated a website project.
- **Secured 5-year financing** for web domain.

Skills

Soft Skills

Leadership, Communication, Problem Solving, Goal Orientation

Programming

Python, TeX, SQL, git, Bash

DA Software

SSMS, Excel

DA Python

NumPy, Pandas, Matplotlib, Seaborn, SciPy, Tensorflow, statsmodels, scikit-learn

Languages

Spanish (native), English (fluent)

Photography

Gimp, Inkscape

Video

Olive

Education

Universidad de Concepción

MASTER DEGREE (MSC, ASTRONOMY)

- Thesis title: **WISE2MBH: A simple algorithm for morphology, bulge fraction and black hole mass estimation using WISE catalogs**
- Advisor: DR. NEIL NAGAR

Concepción, Chile

Mar, 2022 – Jan, 2024

Universidad de Concepción

BACHELOR DEGREE (BSC, 2021) AND PROFESSIONAL TITLE (2023) IN ASTRONOMY

Concepción, Chile

Mar, 2018 – Aug, 2023

Workshops & Certificates

2024	Advanced Learning Algorithms , DeepLearning.AI & Stanford University	Certificate
2024	Supervised Machine Learning: Regression and Classification , DeepLearning.AI & Stanford University	Certificate
2023	Certification in Machine Learning with Python , freeCodeCamp	Certificate
2022	Certification in Data Analysis with Python , freeCodeCamp	Certificate
2022	Certification in Scientific Computing with Python , freeCodeCamp	Certificate
2022	Certification in Cloud Computing , Google & Esc. de Org. Industrial	
2021	School of Physics of the Master in Physical Sciences , Universidad del Bío-Bío	
2019	Advanced (C1) English Course , SNBP & BiblioRedes	