

Yordanka Apostolovski

Ph.D. in Astrophysics

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in yordanka-apostolovski

Professional Profile

Astrophysicist (Ph.D., *Magna Cum Laude*) with a strong quantitative background in physics, mathematics, and data analysis, and a career that integrates academic research, higher education teaching, and leadership of publicly funded research, development, and innovation (R&D&I) projects. My work spans observational and experimental science, advanced scientific data reduction, physical modeling, and applied technology development.

Alongside my academic trajectory, I have developed a professional profile focused on the transfer of scientific knowledge to real-world applications, working at the interface between science, engineering, and innovation. I have led interdisciplinary teams in data science, artificial intelligence, electronics, and software, connecting academic research with technology validation in operational environments. I am strongly committed to high-quality teaching, student mentoring, and the integration of scientific rigor into applied and industrial contexts.

Education

- 2015–2020 **Ph.D. in Astrophysics, *Magna Cum Laude***, *Universidad Andrés Bello*, Santiago, Chile
Thesis: *Studies of the Interstellar Medium in Distant, Gravitationally Lensed Star-Forming Galaxies*.
Supervisors: Dr. Timo Anguita and Dr. Manuel Aravena.
- 2011–2014 **B.Sc. in Astronomy, Graduated with Distinction**, *Universidad Andrés Bello*, Santiago, Chile

Research Experience

- 2020–2022 **Postdoctoral Researcher**, *Universidad de Valparaíso*, Valparaíso, Chile
Project: *An ALMA Perspective to Tackle the Star Formation Efficiency in Galaxies at Different Redshifts*.
Funding: ESO–Chile Joint Committee.
Supervisor: Dr. Eduardo Ibar.
- Source extraction and analysis for the KASHz, KGES, SHiZELS, SINS, and K3D surveys using multi-band ALMA archival data.
 - Calibration and imaging using the ALMA Science Pipeline, including manual reprocessing, masking of complex emission, and field-of-view optimization.
 - Quantitative analysis of star formation efficiency in galaxies across cosmic time.
 - Active participation in international collaborations including JELS and ALPINE.
- 2015–2020 **Doctoral Researcher**, *Universidad Andrés Bello*, Santiago, Chile, Member of the STRIDES and South Pole Telescope (SPT) international collaborations.
- Research on high-redshift galaxies, galaxy protoclusters, and gravitationally lensed systems.
 - Research stays at ESO (Garching, Germany, 2018) and Yale University (USA, 2016).
- 2011–2015 **Research Assistant**, *Universidad Andrés Bello*, Santiago, Chile, Participation in FONDECYT projects 11090421, 11100449, and 1140352, and the Millennium Center for Supernova Science (MCSS).
- Analysis of light curves of supernovae and active galactic nuclei.
 - Participation in the CHASE program for early supernova detection.

Higher Education Teaching Experience

- 2024 **Undergraduate Thesis Co-supervisor**, *Universidad Técnica Federico Santa María*, Valparaíso, Chile
Co-supervision of undergraduate theses within technology and innovation projects. Support in methodological design, quantitative analysis, and validation of results.
- 2023 **Undergraduate Lecturer**, *Universidad Andrés Bello*, Santiago, Chile
Course: **LAST322 – Astronomy Laboratory I**. Design of experimental activities and assessment of analytical competencies.
- 2023 **Undergraduate Lecturer**, *Universidad Adolfo Ibáñez*, Viña del Mar, Chile
Courses: **CIE242 – Topics in Modern and Contemporary Physics** and **CORE302 – Science**, with an interdisciplinary approach.
- 2017–2020 **Teaching Assistant in Physics**, *Universidad Andrés Bello*, Santiago, Chile
Support for General Physics and Physics I courses, including problem-solving sessions, laboratory activities, and student mentoring.

Professional Experience and R&D

- 2024–2025 **Director of Research and Development**, *IGO Technologies*, Santiago, Chile
Leadership and management of publicly funded R&D&I projects. Coordination of interdisciplinary teams in data science, artificial intelligence, electronics, and software development. Planning and monitoring of technical and administrative milestones, validation in real operational environments, and articulation between academia, technology centers, and the productive sector.

Scientific Publications (Refereed)

First Author

- 2024 Apostolovski, Y. et al. *Extended Lyman- α emission towards the SPT2349-56 protocluster at $z = 4.3$* . *Astronomy & Astrophysics*, 683, A64.
- 2019 Apostolovski, Y. et al. *Imaging the molecular interstellar medium in a gravitationally lensed star-forming galaxy at $z = 5.7$* . *Astronomy & Astrophysics*, 628, A23.

Co-authorship

Publications in peer-reviewed journals including *Monthly Notices of the Royal Astronomical Society* and *The Astrophysical Journal* (2018–2021). Full and verifiable list available via ADS: <https://ui.adsabs.harvard.edu/public-libraries/sID0lhhuR2-kJJ8tPmevaA>

Competitive Grants and Funded Projects

- ESO–Chile Postdoctoral Researcher, Joint Committee Programme.
- ANID Startup Ciencia **SUC220003**. Project Director.
- ANID Startup Ciencia **SUC240005**. Project Director.
- CORFO Crea y Valida **23CVC2-251565** (2023). Project Director.
- ANID Subsidy for Insertion into the Productive Sector **87240006** (2024). Project awarded and not executed.
- FONDECYT Projects 11090421, 11100449, 1140352. Role: Research Assistant.

Student Supervision

Cristopher Silva, undergraduate thesis for the degree of Civil Telematics Engineer (UTFSM).
Role: Co-supervisor.

Academic Service and Outreach

Participation in thesis committees, preparation of technical and academic reports, management of R&D&I projects, and collaboration with technology centers and industry. Participation in scientific and technological fairs such as Expomin and Exponor.

Patents and Intellectual Property

INAPI Patent Application No. 202401951 (2024). *Positioning and environmental monitoring device for complex geographical environments*. Role: Inventor.

Languages

Spanish (native). English (advanced).

References

Dr. Timo Anguita Director, Ph.D. Program in Astrophysics
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