

Jude Vijayanga Wijesekera, MSc.

✉ vijayanga18@gmail.com

🌐 Jude Vijayanga Wijesekera

🌐 <https://judevijayanga.github.io/>

Dedicated researcher with 3+ years of expertise focused on galaxy formation and evolution in the early universe ($z \sim 6$). Demonstrated success in executing complex data pipelines and SED fitting using CIGALE to analyze the star-forming main sequence, infrared luminosity functions, and dust attenuation across cosmic time. Proven leader with experience heading academic staff at a national institute, combining advanced technical proficiency in Python (NumPy, Astropy) with a track record of high-impact publications.

Education

- October 2022 – July 2026 ■ **PhD in Astronomy (reading)** Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University, Poland.
Supervisor: dr. hab. Maciej Koprowski, Prof. UMK
Dissertation title: *Time evolution of the star formation rate density in the early Universe.*
- September 2020 - July 2022 ■ **M.Sc. in Astrophysics and Cosmology** University of Padova, Italy.
Supervisor: Professor Paolo Cassata.
Thesis title: *Dust and molecular gas properties of a large sample of main-sequence galaxies at $3 < z < 4$.*
- July 2012 - February 2017 ■ **BSc in Natural Sciences (Physics)** The Open University of Sri Lanka.
Thesis title: *Analysis of type II and type III solar radio burst using e-Calisto system.*

Work History

- 2018 – 2020 ■ **Head of the Academic Staff**, Institute of Astronomy, Sri Lanka.
- Trained and mentored undergraduate students, overseeing their academic progress and development.
 - Designed, developed, and managed comprehensive course materials for the institute's educational programs.
 - Organized and directed practical observing camps to provide students with hands-on astronomical experience.
- 2017 – 2019 ■ **Teaching Assistant**, Department of Physics, The Open University of Sri Lanka.
- Guided over 200 undergraduate students through complex practical laboratory sessions across a wide range of disciplines, including General Physics, Thermodynamics, Electromagnetism, Electronics, Optics, Waves, and Geology.
 - Supervised practical experiments to ensure safe and effective execution of laboratory protocols.
 - Evaluated student performance through the rigorous grading of coursework, lab reports, and the invigilation of examinations.

Other Research Experiences





- 28th July 2025- 1st August 2025 ■ **Internship at National Centre for Nuclear Research (NCBJ), Poland**, carried out SIMBA cosmological simulation.

Other Research Experiences (continued)


- 26th May 2025- 31st May 2025  **Internship at National Centre for Nuclear Research (NCBJ), Poland**, carried out SIMBA cosmological simulation.
- June 2021-September 2021  **Internship at International School for Advanced Studies (SISSA), Italy**, Title: A Comprehensive X-ray view of the active nucleus in NGC 4258.
- April 2019-April 2020  **A project on probing emission-line properties of galaxies in the local Universe**, Supervisor: Dr Themiya Nanayakkara, Postdoctoral Fellow, Swinburne University, Australia.

Research Publications

Peer-Reviewed Journals

- 1 M. Koprowski et al., "Evolution of the infrared luminosity function and its corresponding dust-obscured star formation rate density out to $z \sim 6$," *Astronomy & Astrophysics*, vol. 706, A345, 2026.  DOI: 10.1051/0004-6361/202557505.
- 2 J. Wijesekera et al., "Evolution of dust attenuation in star-forming galaxies with uv slope, stellar mass, and redshift out to $z \sim 5$," *Astronomy & Astrophysics*, arXiv-2602, 2026.  DOI: 10.1051/0004-6361/202557505.
- 3 M. Koprowski et al., "Charting the main sequence of star-forming galaxies out to redshifts $z \leq 5.7$," *Astronomy & Astrophysics*, vol. 691, A164, 2024.  DOI: 10.1051/0004-6361/202449948.
- 4 A. Masini, J. Wijesekera, A. Celotti, and P. G. Boorman, "Comprehensive x-ray view of the active nucleus in ngc 4258," *Astronomy & Astrophysics*, vol. 663, A87, 2022.  DOI: 10.1051/0004-6361/202243231.


Conference Proceedings

- 1 B. Perera et al., "Qualitative review of the photometric data of six ultra-faint dwarf galaxies," in *Proceedings of the International Conference on Applied and Pure Sciences (ICAPS 2021-Kelaniya)*, Faculty of Science, University of Kelaniya, Sri Lanka, vol. 1, 2021, p. 52.
- 2 B. Perera et al., "Stellar populations and the structural properties of six ultra-faint dwarf galaxies," in *Proceeding of the Open University Research Sessions (OURS 2021)*, The Open University of Sri Lanka, 2021, p. 147.
- 3 J. Wijesekera, K. Jayaratne, and J. Adassuriya, "Analysis of type ii and type iii solar radio bursts," in *Journal of Physics: Conference Series*, IOP Publishing, vol. 1005, 2018, p. 012 046.  DOI: 10.1088/1742-6596/1005/1/012046.
- 4 Y. Ramawickrama, J. Vijayanga, R. Dharmarathne, and H. Wijesooriya, "The future of gnss in the next ten years," in *Proceedings of the 3rd Asia Pacific Space Generation Workshop (3rd AP-SGW)*, Los Barnos, Philippines, 2016, pp. 12-13.

Books and Chapters

- 1 J. V. Wijesekera, Ed., *Practice for Astronomy Olympiad Book*. S&T Group, Sri Lanka, 2016, ISBN: 978-955-1080-24-2.

Skills

Languages  Strong reading, writing and speaking competencies in English

Skills (continued)

Coding	Python-advanced , Visual Basic, C++, Git hub, \LaTeX , ...
Astronomy packages/software	CIGALE, MAGPHYS, DS9, Topcat, CASA, Fast++, XSpec, CIAO 4.13, FSPS.
Astronomy Databases & Surveys	CANDELS fields, COSMOS, COSMOS-web & UDS catalogs, ALMA, SDSS (DR12 & DR16), GAIA survey, Chandra.
Web Dev	HTML, css, JavaScript.
Misc.	Academic research, teaching, \LaTeX typesetting and publishing.

Miscellaneous Experience

Awards & Grants

2022-Present	PhD Scholarship Grant , Polish National Science Centre Sonata 16 Grant nr 2020/39/D/ST9/03078.
2017	SPECTRUM Award for Excellence in Physics for Fundamentals of Geophysics , The Open University of Sri Lanka.
2016	SPECTRUM Award for Excellence in Physics for ‘Essentials of Geology , The Open University of Sri Lanka.
	SPECTRUM Award for Excellence in Physics for Astronomy , The Open University of Sri Lanka.
2011	National Color Award for International Olympiad of Astronomy & Astrophysics , University of Colombo, Sri Lanka.

Certifications

2024	Fundamentals of Deep Learning . Awarded by NVIDIA.
2023	Scientific Writing and Publishing . Awarded by Nature Masterclass.

Workshops & Schools

2025 - July	Advanced Summer School Galaxy Formation and Evolution , AKSS, Spetses (Greece).
2022	11th IRAM Interferometry School , Grenoble, France.
2018	NARIT COMPUTational Astrophysics and Cosmology (NARIT COMAC) Workshop , Chiang Mai, Thailand.
	NARIT-Institut d’Optique Graduate School. Optical Design Summer School , Chiang Mai, Thailand.
2016	Astronomical Data Reduction Workshop , Arthur C Clarke Institute for Modern Technologies, Moratuwa, Sri Lanka.