

Nico Winkel

ASTRONOMER | DATA SCIENTIST



I am an astrophysicist with 4+ years experience in data analysis, machine learning, and visualization of terabyte-scale imaging-spectroscopic data sets. I am trained in analytical methods, developing strategies for problem-solving and communicating complex concepts to various audiences. With my proficiency in collaborating in international environments, I am motivated to expand my skills, and leverage my expertise to develop high-impact applications in astronomy and data-driven technologies.

SKILLS

Programming	Python (NumPy, Pandas, Scikit-learn, SciPy, Matplotlib, Seaborn), SQL, Bash, IRAF, PyRAF, DS9, QFitsView, TOPCAT
Tools & Tech	Git, Jupyter, LaTeX, Adobe Illustrator, Libre Office and Adobe Photoshop, High-Performance Computing
Software	Main developer of Siena ^{3D} github.com/nicowinkel/Siena3D
Languages	German (native), English (fluent), French (basic)

WORK EXPERIENCE

10/2024 - now	Post-doctoral Researcher Data Science Max-Planck-Institute for Astronomy, Heidelberg Principal Investigator of a Large Programme (>200h) at the most oversubscribed telescope in history (ESO VLT UT4 Yepun) • Data analysis from NASA/ESO telescope ALMA • N-body simulations • Statistical analysis and modeling • Project Development • Forming international collaborations • So far 1 projects published as lead scientist and 2 as co-investigator
01/2020 - 10/2024	Doctoral Researcher Data Science Max-Planck-Institute for Astronomy, Heidelberg Data analysis from NASA's space telescopes including HST and JWST • Instrument calibration pipeline development • 3D spectroscopic data acquisition, analysis and modeling and with ESO's VLT • Statistical analysis and modeling • Project Development • Contribution to international collaborations • Proposal development for grant funding and telescope time • Presentation at 6 conferences across continents • 4 projects published as lead scientist and 8 as co-investigator
11/2019 - 12/2019	Student Assistant Physics University of Heidelberg STEM student support for developing scientific skills and fostering independent learning methods • Tutoring in support of physics and mathematics tutorials

EDUCATION

10/2020 - 10/2024	Ph.D. Astronomy <i>University of Heidelberg, Germany</i>
10/2018 - 09/2020	M.Sc. Physics <i>University of Heidelberg, Germany</i>
10/2014 - 09/2018	B.Sc. Physics <i>University of Heidelberg, Germany</i>

COMMUNITY SERVICE

2023 - now	Referee for science journal <i>Astronomy & Astrophysics</i>
2021	Teaching Advanced Physics Courses at University of Heidelberg
2018 - 2019	Private Tutor for Studentenring Heidelberg