UDAY NAKADE

Born 11.11.1995 | Indian | Single

uday.j.nakade@gmail.com | +49 1522 396 2001 | Fürstenriederstr. 57, 80686, Munich

EDUCATION

Expected Sep 2025	Master of Science in Astrophysics, *Ludwig Maximilian University (LMU), Munich*	Grade: 2.16 Scale: 5 to 1
Oct 2021	Master of Science in Physics, *Ludwig Maximilian University (LMU), Munich*	Grade: 2.20 Scale: 5 to 1
Aug 2018	Graduate school in Astronomy and Astrophysics, *Inter-University Center for Astronomy and Astrophysics (IUCAA), Pune*	Grade: A- (7) Scale: 0 to 9
Jun 2017	Bachelor of Technology in Engineering Physics, *Indian Institute of Technology (IIT), Delhi*	Grade: 7.57 Scale: 0 to 10

SCHOLASTIC ACHIEVEMENTS

Secured all India rank of 1381 among 1.3 million students appearing for JEE 2013, which is an exam for admission to undergraduate programs at Indian Institutes of Technology (IITs).

Obtained the maximum attainable score of 990 in the GRE Physics subject test.

Secured all India rank 7 in the CSIR-UGC NET exam (test for PhD funding, December 2017).

Work on spectral rendering selected for poster presentation at SLTBR and CIE conferences.

PUBLICATIONS

Jun 2025	U. Nakade and M. Spitschan, "Predicting visual field boundaries from head features," J. Opt. Soc. Am. A 42, C19-C26 (2025). https://doi.org/10.1364/JOSAA.551858.

PROJECTS AND PREVIOUS EXPERIENCE

Oct 2023 – present (Master thesis)	**Field-level inference from Lyman-α Forest spectra using deep learning**
	Inference of thermal properties of the intergalactic medium from Lyman-α Forest spectra usually relies on summary statistics. We are training a 1D ResNet to take the full spectrum into account by employing Tensorflow, Keras, and keras-tuner. Inference pipeline for 2 parameters has proved ~11 times better than other approaches, my work will extend the model to 3 parameters.

May 2022 – Dec 2023	Simulating light in realistic 3D scenes to study impact on human health
	The internal clock in animals is synchronized with the day-night cycle by blue light exposure. In this project, we simulated light in realistic 3D scenes using the physically realistic spectral rendering engine Mitsuba 3 to help study the impact on humans. This required Python programming, geometric optics, etc. The work was selected for poster presentation at the SLTBR and CIE conferences. A paper on visual field prediction from facial identity has been published, and a paper on rendering pipeline using Blender and Mitsuba 3 is currently in preparation.
Apr 2021 – Oct 2021 (Master thesis)	Inferring time-dependent parameters of a dynamical system with the pandemic example
	In this project, we tried to use techniques of Information Field Theory to infer parameters involved in the spread of COVID-19 (like rate of spread, effect of government measures, etc.), using the NIFTy framework, coded in Python.
May 2021 – Sep 2021	Secure multi-party computations
	As a part-time employee of LMU Klinikum, I contributed to the open-source project "fdrtd", which has been selected by Stifterverband as one of the "ten best ideas to shape the German innovation, education, and science system". It enables collaborative research between multiple data owners without explicitly sharing the data. I developed an API for the R library "DataSHIELD" in Python and integrated it with a microservice architecture.

TECHNICAL SKILLS

Programming experience in Python, JAVA, etc. Experience with Linux, GitHub, LaTeX, etc.

HOBBIES AND EXTRA-CURRICULAR ACTIVITIES

Astro- and Macro-photography, travelling, mobile and computer software.

REFERENCES

1	Prof. Dr. Manuel Spitschan	Contact:
	MPI for Biological Cybernetics and Technical University of Munich	Telephone: +49 (0) 7071 601 1670 E-mail: manuel.spitschan@tuebingen.mpg.de
2	Dr. Robert Redl	Contact:
	IT department, Faculty of Physics, Ludwig Maximilian University of Munich	Telephone: +49 (0) 89 2180 4569 E-Mail: robert.redl@lmu.de
3	PD. Dr. Torsten Enßlin	Contact:
	MPI for Astrophysics and Ludwig Maximilian University of Munich	Telephone: +49 (0) 89 30000 2243 E-Mail: ensslin@mpa-garching.mpg.de