Sankarshana Srinivasan

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Citizenship: India

Employment

August 2026 – August 2028
Physics for Future Fellow at CEICO, Prague with secondment at Oxford, UK
Hosts: Professor Constantinos Skordis and Prof. David Alonso

October 2023 – October 2025
Alexander Von-Humboldt Post-Doctoral Fellow at LMU Munich
Host: Professor Jochen Weller

October 2022 – March 2023
Post-Doctoral Research Associate at University of Manchester
Group Leader: Professor Richard Battye

Education

September 2018 – October 2022
University of Manchester – Manchester, UK
PhD in Astronomy & Astrophysics
Mentors: Professor Richard Battye, Dr Daniel Thomas.
Thesis Title : Probing Model-Independent Modified Gravity and Axion Dark Matter

Collaboration Work

2022 onwards
Lead of Euclid DR1 parameterised tests of gravity paper. Co-lead WP1 SP3 paper on forecasts for parameterised modified gravity. Member of Euclid Theory working group.

2022 onwards
Co-convenor of Modelling and Combined Probes (MCP) team and member of forecasting team in LSST (Nov 2025 - March 2026). Co-lead (with Dr Agnes Ferte) of LSST project on non-linear modelling of phenomenological modified gravity ($\mu - \Sigma$). Co-lead on validation of Augur forecasting tool in LSST (with Dr Paul Rogozenski).

Research focus

Large-scale structure and weak gravitational lensing: Development and validation of end-to-end inference pipelines for cosmological surveys, with emphasis on nonlinear scales, multi-probe (photometric 3×2pt, CMB, galaxy cluster) analyses, and systematic uncertainty control. Experienced in end-to-end 3×2pt pipelines in the context of model-agnostic modified gravity searches using LSS data.

Simulation-driven cosmological inference: Use of N-body and approximate simulations, emulators, and simulation-assisted methods to assess modelling assumptions and robustness in weak-lensing and galaxy-clustering analyses, including scale cuts and nulling techniques.

Astrophysical data analysis: Experience with real, radio astronomy datasets and data analysis pipelines, with particular focus on matched filtering agorithms with applications to axion dark matter searches.

Publication List (ADS)

https://ui.adsabs.harvard.edu/user/libraries/ufFJmkgwSYeL9F63Tn0aEQ

Honors and scholarships

2023 Alexander von Humboldt Fellowship (LMU Munich)

2018 George Rigg Scholarship (University of Manchester)
Scholarship awarded to prospective PhD students of all nationalities that have proven themselves to be exceptional among their peers..

2018 Overseas Research Scholarship (University of Manchester); https://www.physics.manchester.ac.uk/study/postgraduate-research/funding/

Students Co-Supervised

Utkarsh Bhura MSc at University of Manchester (currently PhD student at Kings College London supervised by Prof David Marsh)

Anna Cremaschi MSc at LMU Munich (currently pursuing PhD at LMU Munich supervised Dr Julia Stadler)

Conferences and Talks

May 2025 Invited speaker at Dutch Cosmology Meeting at Utrecht, NL
60 minute talk on testing gravity with future surveys

April 2025 Invited Speaker at OPINAS Ringberg Meeting, Germany
20 minute talk on tesing gravity with large scale structure

April 2025 Invited Speaker for Renoir Talk at CPPM Marseille
60 minute talk on tesing gravity with large scale structure, CMB lensing and voids

January 2025 Invited speaker at Rencontres Du Vietnam: Theory Meets Experiment.
20 minute talk on testing gravity with data from large scale structure

October 2024 LMU-Cambridge Workshop: Presented 20 minute talk on Large Scale Structure Forecasts for Pixelized Modified Gravity

March 2024 Participant in Moriond:Cosmology at La Thuille, Italy. Presented 15 minute talk on Model-Independent N-body Simulations of Modified Gravity

January 2024 Invited talk at Munich Dark Matter Meeting: Detecting axions around neutron stars with radio telescopes

Technical skills

Programming languages/Software

Proficient in: C, C++, Python. Capable of parallelising software within framework of HPC cluster using MPI/OpenMPI. LaTeX, Git, Mathematica. Capable of working with and modifying Boltzmann codes in Cosmology such as CLASS, CAMB. Also proficient with modular codes such as `Cosmosis`, CCL. Experienced in using and modifying the N-body code `Gadget-2` and `Gadget-4`. Knowledge of Torch library to build neural network architectures.