

# Mudit Garg

Nationality : Indian

Date of Birth : 19/01/1996

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## EDUCATION

08/2021 – Present	PhD in Gravitational Waves Astrophysics <b>University of Zurich</b>	Supervisor: Prof. Dr. Lucio Mayer
09/2018 – 12/2020	Master of Science in Physics <b>with distinction</b> <b>ETH Zurich</b>	GPA: 5.87/6 Thesis: Relativistic, ghost-free, and covariant hybrid model for MOND: $f(Q)$ under Prof. Dr. Lavinia Heisenberg
07/2014 – 06/2018	Bachelor of Technology in Engineering Physics <b>Indian Institute of Technology Delhi</b>	GPA: 8.15/10 Thesis: Geodesics near a charged black hole in $(R \pm \mu^4/R)$ gravity under Prof. Dr. Ajit Kumar

## SELECTED TALKS/PRESENTATIONS

11/2022	<b>Annual PhD Jamboree</b> Institute for Computational Science, University of Zurich <sup>†</sup> <i>Eccentric Binaries in the LISA band</i>	Zurich
11/2022	<b>Conference:</b> LISA data analysis: from classical methods to machine learning <i>CNRS, L2IT, APC, CEA, and CNES<sup>†</sup></i> TBD	Toulouse
09/2022	<b>Conference:</b> Origin, growth and feedback of black holes in dwarf galaxies <i>Donostia International Physics Center</i> <i>The imprint of Gas on GWs from LISA IMBH Binaries</i>	Donostia-San Sebastian
05/2022	<b>Conference:</b> Intermediate-Mass Black Holes: New Science from Stellar Evolution to Cosmology CIERA, Northwestern University <i>Gas impact on GWs from LISA IMBH Binaries</i>	San Juan
02/2022	<b>Annual PhD seminar</b> Institute for Computational Science, University of Zurich <i>The Future of GWs</i>	Zurich
11/2021	<b>Annual PhD Jamboree</b> Institute for Computational Science, University of Zurich <i>IMBH Binaries detectable by LISA</i>	Zurich

\* Attended online † Will participate

## PROGRAMS/SCHOOLS

11/2022	<b>Workshop:</b> LISA data analysis: from classical methods to machine learning <i>CNRS, L2IT, APC, CEA, and CNES<sup>†</sup></i>	Toulouse, France
07/2022	<b>Workshop:</b> LISA Data Challenge Workshop <i>LISA Data Challenge Working Group*</i>	Online
07/2022	<b>Workshop:</b> From Scattering Amplitudes to Gravitational-Wave Predictions for Compact Binaries <i>Pauli Center for Theoretical Studies, ETH Zurich &amp; University of Zurich</i>	Zurich, Switzerland
06/2022	<b>Meeting:</b> LISA Astrophysics Working Group <i>Institute for Gravitational Wave Astronomy, University of Birmingham*</i>	Birmingham, UK
01/2022	<b>Saas-Fee School:</b> Compact-Object Astrophysics in the Era of Multi-Messenger Astronomy <i>Swiss Society for Astrophysics and Astronomy</i>	Saas-Fee, Switzerland
08/2021	<b>NBIA School:</b> Gravitational wave astrophysics <i>Niels Bohr Institute, University of Copenhagen</i>	Copenhagen, Denmark
06/2021	<b>Meeting:</b> LISA Astrophysics Working Group <i>Institute for Computational Science, University of Zurich*</i>	Zurich, Switzerland

\* Attended online † Will participate

## PUBLICATIONS

2022	“The imprint of gas on gravitational waves from LISA intermediate-mass black hole binaries” <i>Mudit Garg, Andrea Derdzinski, Lorenz Zwick, Pedro R. Capelo, Lucio Mayer</i>	<a href="#">MNRAS</a>
2022	“Dirty waveforms: multiband harmonic content of gas-embedded gravitational wave sources” <i>Lorenz Zwick, Andrea Derdzinski, Mudit Garg, Pedro R. Capelo, Lucio Mayer</i>	<a href="#">MNRAS</a>
2020	“Non-linear extension of non-metricity scalar for MOND” <i>Fabio D’Ambrosio, Mudit Garg, Lavinia Heisenberg<sup>‡</sup></i>	<a href="#">PLB</a>
2020	“ADM formulation and Hamiltonian analysis of Coincident General Relativity” <i>Fabio D’Ambrosio, Mudit Garg, Lavinia Heisenberg, Stefan Zentarra<sup>‡</sup></i>	<a href="#">arXiv</a>

<sup>‡</sup> Alphabetical order

## SKILLS

**Programming Languages:** Python | LaTeX | R

**Languages:** English | German (A1.1) | Hindi

**Software:** Mathematica | LALSuite

**Others:** PyTorch | Terminal | Git

## ASSISTANCE

02/2022 – 06/2022	<b>Teaching Assistant</b> for “Universe: Contents, Origin, Evolution and Future” <i>Supervisor: Prof. Dr. Lucio Mayer &amp; Dr. Pedro R. Capelo</i>	University of Zurich
09/2021 – 01/2022	<b>Teaching Assistant</b> for “Theoretical Astrophysics” <i>Supervisor: Prof. Dr. Robert Feldmann</i>	University of Zurich
02/2021 – 07/2021	<b>Research Assistant</b> at Institute for Computational Science <i>Supervisor: Prof. Dr. Lucio Mayer</i>	University of Zurich
10/2019 – 12/2020	<b>Research Assistant</b> at Chair of Strategic Management and Innovation <i>Supervisor: Dr. Yash Raj Shrestha &amp; Zoe Jonassen</i>	ETH Zurich
03/2019 – 07/2019	<b>Course Assistant</b> for “Quantum Field Theory II” <i>Supervisor: Prof. Dr. Massimiliano Grazzini</i>	University of Zurich

## PRE-DOCTORATE RELEVANT PROJECTS

04/2020 – 11/2020	<b>GW Data Project:</b> Distinguishing deviations from GR and eccentricity effects in GWs data <i>Supervisor: Dr. Maria Haney</i>	University of Zurich
02/2020 – 06/2020	<b>Machine Learning Course Project:</b> Mini projects related to regression, feature selection, data imputation, neural networks, and CNN using PyTorch framework	ETH Zurich
10/2018 – 01/2019	<b>GW Theory Project:</b> Gravitational waves and their propagation in the $\Lambda$ CDM Universe <i>Supervisor: Prof. Dr. Philippe Jetzer</i>	University of Zurich

## OTHER ACTIVITIES

- **Hobbies and Interests:** Badminton, Cooking, Board games, and Trekking