SUBHANKAR KAR

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FIELD OF RESEARCH

- Relativistic Astrophysics
- Black Hole

RESEARCH INTEREST

- Relativistic Astrophysics
- Black Hole
- Polarimetry of Accretion Disk
- Planetary Science
- Observational Astronomy
- Astronomical Instrumentation
- Computational Physics
- Quantum Computation
- Quantum Information Theory

EDUCATION

Ph.D. in Astrophysics, Indian Centre for Space Physics **May 2026 – Present**
Under the supervisor Prof. Sandip K. Chakrabarti

Master of Science (M.Sc.) in Physics, University of Kalyani **Nov 2021 - Sep 2023**
CBCS : Computer Science.
CGPA : 6.82 (63.24%).

Bachelor of Science Honours (B.Sc. Hons.) in Physics, University of Kalyani **Jun 2018 - Aug 2021**
Minor in Math & Chemistry.
CGPA : 8.56 (80.00%).

Higher Secondary Education in Science, WBCHSE **Jun 2018**
Percentage : 80.2%.

Secondary Education, WBBSE **May 2016**
Percentage : 86.28%.

COMPETITIVE EXAM QUALIFICATIONS

CSIR NET 2025 Dec (Physical Science, CSIR-JRF & LS) **:** All India Rank (AIR): 126; Percentile: 99.15.
JEST 2025 (Physics, Ph.D. program) **:** AIR: 459; Percentile: 88.09.
CSIR NET 2024 Dec (Physical Science, Ph.D. admission only)**:** Percentile: 93.25.
JEST 2021 (Physics, Integrated Ph.D. program) **:** AIR: 351; Percentile: 88.99.
IIT JAM 2021 (Physics) **:** AIR: 2073; Percentile: 85.50.

SKILLS

Programming Languages **:** Python, C.
Data Science Libraries **:** NumPy, SciPy, Matplotlib, Pandas, TensorFlow.
Data Skills **:** Data Analysis, Data Visualization, Statistical Analysis.
Software &Tools **:** Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Google Docs, Google Sheets, Google Slides etc.
Typesetting **:** LaTeX typesetting.

UNIVERSITY PROJECT

Physics Informed Neural Network Approach to Quantum Harmonic Oscillator **Jun 2023 - Sep 2023**

- Developed a Deep Learning model using Tensor-Flow to predict energy eigen values and quantum state number of 1D quantum harmonic oscillator.
- Generated numerical wavefunction dataset $(x, \psi(x))$ through analytical equations of state functions.
- Trained the model to classify the quantum states and estimate corresponding energy levels.
- Achieved strong predictive accuracy, with predicted vs actual energy values exhibiting a near-perfect linear correlation (slope ≈ 1).

AWARD

Prof. Prasanta K. Rudra Memorial Award for 3rd Place in Poster Presentation Competition (M.Sc.) University of Kalyani. **Feb 2023**

CERTIFICATIONS

- Certificate for Junior Research Fellowship (JRF) (valid from 1st April 2026 to 31st March 2028) and Eligibility for Assistant Professor (1st April 2026 to lifetime valid)
- "Certificate for Admission to Ph.D. only" from 'National testing Agency (NTA)'; valid from 11th July 2025 to 11th July 2026.

- Certificate in Python Programming (Basic) from Industrial Training.
- Certificate in Computer Application from JYCSM.
- Certificate of Participation in Online Course on “Overview of Global Navigation Satellite System” from IIRS-Dehradun (ISRO).