

# A R Bathri Narayanan

Student in Integrated M.Sc,Physics

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[GitHub](#)

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## Work Experience/Projects

- **Master Thesis Project** Bengaluru, KA , India  
*Indian Institute of Science* June 2025 - Present
  - **Guide:** Prof. Vibhor Singh
  - **Skills learnt:** Quantum hardware, COMSOL, Sympy
  - Working on Blackbox and EPR quantization of superconducting qubits
- **Internship** Mumbai, MH, India  
*Tata Institute of Fundamental Research* December 2024-Present
  - **Guide:** Prof. Rudrajyoti Palit
  - **Skills learnt:** Graph theory, Level spectra, Nuclear physics
  - Currently working on an analytical formula that relates nuclear level schemes to experimental data, done by Gregory A Demand
- **Semester Reading Project** Mumbai, MH, India  
*UM-DAE Centre for Excellence in Basic Sciences* August 2024-June 2024
  - **Guide:** Prof. Sudhir Ranjan Jain
  - **Skills learnt:** Quantum Information, Relativity
  - We went through Prof. Miles Blencowe's paper on Analogue gravity with Superconducting qubits. We had also explored Current mirror qubits and modifications to the original paper were done
- **Summer Intern** Chennai, TN, India  
*The Institute of Mathematical Sciences* May 2024-July 2024
  - **Guide:** Dr. M. Padmanath
  - **Skills learnt:** Complex analysis, Python (Numpy, Scipy, Matplotlib, PyROOT)
  - Tried to write a code for finding the best fit Padé approximation. Also wrote code for modifying the square root of a complex number by shifting the branch cut to the positive real axis. My work will be useful for scattering data and ensuring analytic continuity
  - Certificate: [Click here](#) ; Report: [Click here](#)
- **Remote Intern** Guwahati, AS, India  
*Indian Institute of Technology, Guwahati* June 2024-July 2024
  - **Guide:** Prof. Amarendra Kumar Sarma
  - **Skills learnt:** Quantum entanglement, Quantum computing
  - Did a course with Prof. Sarma in NPTEL on Quantum Entanglement, and this project is an extension of the same. Read the works of Rasmussen et.al about superconducting qubits.
- **Intern** Mumbai, MH, India  
*UM-DAE Centre for excellence in Basic Sciences* December 2023-April 2024
  - **Guide:** Prof. Ameeya Bhagwat
  - **Skills learnt:** Quantum Field Theory, Mathematical physics, Special Relativity

- Did a mini reading project about introduction to Quantum Field Theory. Basics of quantum mechanics and special relativity was touched upon. Primary reference was Lancaster and Blundell's "Quantum Field Theory for the Gifted Amateur"

- **IASc SRFP Intern**

*Harish-Chandra Research Institute*

Prayagraj, UP , India  
June 2023-August 2023

- **Guide:** Prof. Ujjwal Sen
- **Skills learnt:** Quantum Information, Quantum Computing, Quantum Mechanics
- Was selected under the Indian Academies of Sciences, Summer Research Fellowship Program 2023. Read about the basics of Quantum Mechanics (Ket notations), Classical and Quantum Information theory. Also applied the lessons of Quantum Information onto a simple classical problem of a Carnot engine and found out striking resemblances to its classical counterpart.
- Certificate: [Click here](#)

## Education

- **University of Mumbai-Department of Atomic Energy  
Centre for Excellence in Basic Sciences**

*Integrated Masters in Physics*

Mumbai,MH,India  
2021-2026(Present)

- CGPA-8.06

- **Dayananda Anglo Vedic School  
High School**

Chennai,TN,India  
2007-2021

- 10th Grade-96.4%, 12th Grade(Graduation)-96.2%

## Personal Statement

I am a Quantum Information, Computing and Particle physics enthusiast and have undergone training and projects in India's premier institutes (UM DAE CEBS, IISc, HRI and IMSc) and also with IBM and NPTEL. I am currently in my fifth year of Integrated M.Sc at UM DAE Centre for Excellence in Basic Sciences.

## Certifications and Conferences

- **Developer, Qniverse** On-line  
*Centre for Development of Advanced Computing* November 2025  
Certificate yet to be provided
- **REYES Mentorship program** On-line  
*University of Berkeley* September 2025  
Certificate yet to be provided
- **Python4Physics** On-line  
*University of Berkeley* September 2025  
Certificate to be provided
- **Presenter, Aavishkar Inter-Collegiate Research Convention** On-line  
*University of Mumbai* December 2024  
Presented a poster on using Superconducting qubits as a toy model with examples.

- **Attendee, Workshop on Superconducting Hardware** On-line  
*Womanium* *October 2024 - Present*  
 – Collaborators : Carin Samer, Pioneers International School, Alexandria, Egypt ; Dennis Wayo, Nazarbayev University, Kazakhstan
- **Speaker, International Young Quantum Scientists Meet** On-line  
*Jaypee Institute of Information Technology* *September 2024*  
 Topic: Search on Superconducting Qubits (Given on September 18th, 2024)  
 Certificate : [Click here](#)
- **IBM Quantum Challenge** On-line  
*IBM Quantum* *June 2024*  
 Certificate: [Click here](#)
- **Quantum Entanglement Fundamentals, Measures and Applications** On-line  
*NPTEL-IIT Guwahati* *March 2024-April 2024*  
*Instructor: Prof. Amarendra Kumar Sarma*  
 Certificate: [Click here](#)
- **Graph Theory** On-line  
*NPTEL-IISER Pune* *January 2024-March 2024*  
*Instructor: Prof. Soumen Maity*  
 Certificate: [Click here](#)
- **Problem solving and programming in C** On-line  
*NPTEL-IIT Kharagpur* *July 2023-October 2023*  
*Instructor: Prof. Anupam Basu*  
 Certificate: [Click here](#)
- **Basics of Quantum Information** On-line  
*IBM Quantum* *December 2023*  
*Instructor: Prof. John Watrous*
- **Fundamentals** On-line  
*Programming Hub* *December 2023*

## Awards, Grants & Honours

Selected for Science Undergraduate Research Conference	2025
Selected for International Young Quantum Meet	2024
Selected for IMSc SRP	2024
Completed the IBM Quantum Challenge	2024
Selected for Indian Academy of Sciences SRFP	2023
DAE-DISHA Scholarship	2021-Present
Best student award	2016
Bharat Vikas Parishad's <a href="#">Bharat Ko Jano</a>	2016-2021

- National level 2nd place(2021)
- National level 4th place(2020)

- Regional level 2nd place(2018)
- National level 4th place (2017)
- State level 1st place (2016)

## Experience and Position of responsibilities

- **Extended support team** Bengaluru,KA,India  
*Bengaluru Bookies* 2025
  - Helped the team in planning reading events and fun activities around Bengaluru. Notable events include reading at the State Central Library, publishing of Bengaluru Bookies originals, coordinating with Cafés and park associations for events like the joy of letter writing and the one year anniversary of the club.
- **Designer and Co-Coordinator, Novellus magazine** Mumbai,MH,India  
*UM DAE CEBS* 2023-Present
  - Designed a few articles for the Novellus magazine which is the annual college magazine of CEBS. Organised a quiz competition for Samawaya 2023(Annual college cultural fest). Assumed position of Coordinator from July 2024 to September 2024.
- **Coordinator, Dance Club** Mumbai,MH,India  
*UM DAE CEBS* 2023
  - Was the coordinator of "Pravah" which is the Dance club of CEBS. In this position, I oversaw the dance club's performance in the Inter IISER Culture Meets, Samawaya and organised workshops. I also opened the Instagram page of the same, which has some good social media presence
- **Member: Art Club, Science Club, CEBS Lifestyle** Mumbai,MH,India  
*UM DAE CEBS* 2022-Present
  - For the art club, I helped organise treasure hunt, decorations and arrange souvenirs. For CEBS Lifestyle, I helped posting content, clearing doubts for to-be CEBSScientists. For Science club, I helped organise events like Open Mic, Rendezvous etc.
- **Quizzing**  
*Independent*
  - I have won many quiz competitions, and have lead the team for the same. I have also organised quiz selections for IICM and competitions for Samawaya.

## Skills

- Programming, Markup Languages and Software
  - Python(Numpy, Matplotlib, Scipy, Qiskit, PyROOT),  $\text{\LaTeX}$ , FORTRAN, C, ROOT (developed by CERN), GitHub, Adobe InDesign
- Spoken Languages
  - Tamil, English, Hindi (Completed all exams of [DBHPS](#)), German (A1)
- Other
  - Trekking, Photography, Dancing, Building connections, Quizzing