Biplab Mahato

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NATIONALITY Indian

DATE OF BIRTH 4^{th} of July, 1998

EDUCATION

Indian Institute of Science, Bangalore, India.

- Bachelor in Science (Research), Physics Major and Mathematics Minor — Aug 2015 – Present
  - Presently in my 5^{th} year (will be counted as Masters' degree).
  - CGPA - 6.9/8. Batch Rank-7, Discipline Rank-5. (as of August 2019)

Ramakrishna Mission Vidyapith (Affiliated to West Bengal Board of Secondary Education), Vivekanandanagar,Purulia, West Bengal, India

- Higher Secondary Education (Class 11 and 12). — Mar 2013 – Mar 2015
  - Aggregate total 91.6% in Physics, Chemistry, Mathematics, Bengali and English.

Barabhum Higher Secondary School (Affiliated to West Bengal Board, India), Barabazar, Purulia, West Bengal, India

- Intermediate Secondary Education. — Mar 2006 – Mar 2013
  - Aggregate total 96.5% in Bengali, English, Physical Science, Life science, History, Geography and Mathematics.

SUMMER PROJECTS

Indian Institute of Science, Bangalore, India.

- Undergraduate Summer Student, *Quantum Dot Thermometry* — May 2016 – Jun 2016
  - Project: Studied Basic Properties of Quantum Dots, energy levels, conduction of electron through QDs, Constant interaction model, Coulomb Blockade Oscillation and using that determining the temperature of QDs. Project was mostly about reading up theory and handling data from experiments.
  - Supervisors: **Prof. Arindam Ghosh**, Physics Dept., IISc.
- Undergraduate Summer Student, *General Relativity* — May 2017 – Jun 2017
  - Project: Studied Differential Geometry and basics of General relativity. Also little bit of gravitational lensing. Project was purely a reading project.
  - Supervisor: **Prof. Tarun Deep Saini**, Physics Dept., IISc.
- Undergraduate Summer Student, *Quantum Computation* — May 2019 – Jul 2019
  - Project: Implemented a noisy quantum simulator backend in density matrix formalism. We used the frontend of Qiskit library developed by IBM. The code can be found in GitHub with an accompanying paper in arxiv.
  - Supervisor: **Prof. Apoorva Patel**, Center of High Energy physics, IISc.

Australian National University, Canberra, Australia

- Summer student, *Octupole vibrations in* Ca_{20} — May 2018 – Jul 2018
  - Project: I used both time-dependent Hartree-Fock method and Random Phase Approximation method to study octupole vibration in Ca^{40}_{20} and Ca^{48}_{20} to gain insight into the energy levels of the nuclei. On the later part of the project I tried to model fusion of two light nuclei.
  - Supervisor: **Prof. Cedric Simenel** Dept. of Nuclear Physics, Dept. of Theoretical Physics, ANU

BACHELOR THESIS

Skeleton Expansion in Conformal Field Theory

- Project: Calculation of anomalous dimensions and OPE coefficients for ϕ^3 theory in $6-\epsilon$ dimension using Skeleton diagram in Conformal Field Theory upto $O(\epsilon^2)$. Usage of Inversion Integral and Conformal Bootstrap methods.
- Supervisor: **Prof. Aninda Sinha** Centre of High Energy Physics, IISc

ACHIEVEMENTS & SCHOLARSHIPS

- Awardee of **Chennupati and Vidya Jagadish Fellowship and Scholarship Awards** for visiting Australian National University as summer intern. 2018
- Awardee of the **KVPY scholarship** in Class 11 with **All India Rank-108** 2014
  - A fellowship program for students interested in Basic Sciences initiated and funded by the Department of Science and Technology, Government of India.
  - Participated (on invitation) in National Science Camp (Vijyoshi) 2014, held at Science City Auditorium, Kolkata in December 2014.
- Obtained **All India Rank-3362 in JEE(Adv)**, formerly IIT-JEE, the most prestigious exam in India for getting into Indian Institutes of Technology. 2015

- Obtained **All India Rank-1811 in JEE(Main)**, **Rank-75 in WBJEE(Engineering)** and **Rank-91 in WBJEE(Medical).** 2015

OTHER ACTIVITIES

- I have worked for Physics Team in **Pravega'17**, the annual Science and Cultural fest of IISc. I helped in preparing questions for Physics quizzes and designed experiments. I was also part of the Undergraduate Physics Club **Samadhan** and Mathematics Club **Samasya**.
- I have also volunteered for couple of programs organized by **Note-book Drive**, a student-run voluntary body to help and improve quality of education in underprivileged government school around Bangalore.

LANGUAGES

- Bengali: Native language.
- English, Hindi: Fluent (speaking, reading, writing).

PROGRAMMING LANGUAGES & SOFTWARE

C, Python, FORTRAN, Mathematica.

INTERESTS

Sports (Football, Vollyball, Cricket, Frisbee), Athletics.

MISCELLANEOUS

- I like to read novels(Bengali,Hindi and English) in my past-time.
- I love listening to soft rock, folk and Classical Music.