

Curriculum Vitae Yeshan Juberi

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Education

BSc **BRAC University, Bangladesh**, Physics with a minor in Mathematics

Jan 2019 – Dec 2025

Dissertation

Supervisors:

Professor Syed Hasibul Hassan Chowdhury

BRAC University

Ahmed Rakin Kamal (co-supervisor)

Masaryk University, Brno, Czechia

Dissertation topic: From Local Operators to Extended Objects: Higher-Form Symmetries and Axion Quality .

Overview: In this work I did a systematic construction of higher-form symmetries, showed how non-local effects have a natural home in this new framework, and how these effects could help us arrive at an elegant solution to the strong CP problem, while also, through an exponential suppression of the axion potential, improve the axion quality.

Research interests:

- Non-perturbative effects in quantum field theories
- Physics beyond the Standard Model,
- Generalized symmetries.

Seminars attended

Tensor winter school in theoretical physics

Jan 2023

Topics covered:

- Symmetries
- Quantum Information
- Path Integrals
- Numerical Methods

Jamal Nazrul Islam Memorial Winter School in collaboration with the ICTP: International Centre for Theoretical Physics and ICTP PWF: Physics For Bangladesh. [For reference see this](#) [🔗](#)

Jan 2025

Topics covered:

- Cosmology and String theory (String Compactification, Overview of String Models) by Michele Cicoli (Alma Mater Studiorum Università di Bologna INFN, Italy) and Fernando Quevedo (New York University Abu Dhabi, UAE)
- String theory and Black holes by Ashoke Sen (ICTS,India)
- Black Holes and the Information Paradox by Suvrat Raju (ICTS,India)

Work experience

A project regarding Monte Carlo simulations in Ising gauge theory

Mar 2026

Description: Currently, I am working with Professor Nabil Iqbal and Ahmed Rakin Ka-

mal on a project regarding the $\mathbb{Z}_2$ gauge theory. Certain aspects of the project require working with cluster algorithms and higher-form symmetries.

Research assistant at BRAC University

Dec 2025

Description: I am trying to pursue extending extra-dimensional axion constructions beyond S^1 compactification to warped geometries (in my thesis I worked on the $5d$ compactification on a circle toy model).