



Birla Institute of Technology & Science, Pilani
K K Birla Goa Campus

Junior Research Fellow Position
Department of Computer Science and Information Systems
BITS Pilani, K. K. Birla Goa Campus, Goa

Applications are invited for the position of **Junior Research Fellow** in the Department of Computer Science and Information Systems (CSIS) at BITS Pilani, K. K. Birla Goa Campus, Goa. This opportunity is part of a sponsored research project titled:

**“Causal Decision Trees Using Compression Complexity Measures for
Healthcare Applications”**

The project is funded by the **Anusandhan National Research Foundation (ANRF)** under project file no. **ANRF/ECRG/2024/004227/ENS**.

Principal Investigator: Dr. Harikrishnan N B

Broad Area of Research: Causal Machine Learning, Data Compression, Complexity Measures, Interpretable Artificial Intelligence

Duration of the Project: Three Years

Fellowship Amount: Rs. 37,000 per month + 18% HRA

About the Project

This ANRF-funded project aims to develop a novel, model-agnostic causal measure using compression complexity techniques, such as Lempel-Ziv and Effort-To-Compress, to infer the direction of causality from observational data. By leveraging compression-based approaches, the project seeks to establish a data-driven method for causal inference that is independent of specific model assumptions. The research integrates foundational concepts from Machine Learning, Causality Testing Methods, and Data Compression.

Relevant Research

- Dhruthi, Nithin Nagaraj, & Harikrishnan N B. (2024). *Causal Discovery and Classification Using Lempel-Ziv Complexity*. ArXiv, abs/2411.01881.
- Harikrishnan N B, Arham Jain, & Nithin Nagaraj. (2023). *Permutation Decision Trees*. ArXiv, abs/2306.02617.

Qualifications for JRF

- Postgraduate Degree in Computer Science, Data Science, Mathematics, or related fields (preferably NET/GATE qualified).
- Graduate/Postgraduate degree in a Professional course (B.Tech/M.Tech/B.E/M.E) with a strong background in Machine Learning, Causality, or Data Compression.
- Candidates with a Bachelor's degree should be NET/GATE qualified.

Accommodation: Hostel accommodation will be provided subject to availability and will be governed by the rules and regulations of the Institute prevailing at the time of joining.

How to Apply

Interested applicants should submit their application electronically along with the following documents:

- Covering letter (with latest CV)
- Statement of Purpose
- Copy of degree certificate (and NET qualification certificate/GATE score card, if applicable)

The deadline for receiving applications is **April 20, 2025**. Only shortlisted candidates will be contacted via e-mail for an online/personal interview to be held at BITS Pilani, Goa Campus. No TA/DA will be paid for attending the interview.

Selected candidates will also have the opportunity to apply for a PhD degree at BITS Pilani, K. K. Birla Goa Campus (as per the institute's PhD program regulations).

Contact Information

Applications should be sent via email with the subject line "**Application for JRF-Causal ML**" to:

Dr. Harikrishnan N B (Principal Investigator) Department of Computer Science and Information Systems BITS Pilani, K. K. Birla Goa Campus NH 17B, Bypass Road, Zuarinagar, Sancoale, Goa – 403726

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Principal Investigator's Webpage: <https://sites.google.com/site/harikrishnannb8/home>