



Laboratory for Interdisciplinary Breakthrough Science, TIFR Advertisement for postdoctoral positions

The Tata Institute of Fundamental Research (TIFR) is an autonomous research institute funded by the Department of Atomic Energy, Government of India. TIFR is committed to pursuing frontier fundamental research in science and engineering. Advances in and the application of novel methodological developments can greatly aid scientific progress. Recent developments in artificial intelligence and machine learning, in conjunction with the ability to acquire increasingly large datasets, have allowed breakthrough scientific insights.

In keeping with its tradition of excellence and cutting-edge research, TIFR has established the Laboratory for Interdisciplinary Breakthrough Science (LIBS), a consortium of scientists across the TIFR campuses interested in innovating and integrating methods of AI/ML into their research. In an attempt to encourage early career interdisciplinary cutting-edge scholarship, LIBS announces a unique postdoctoral program, where scholars will focus on integration and development of AI/ML approaches to answer key and fundamental questions of interest to TIFR scientists in varied research domains across the spectrum of science. The appointment is for a maximum of three years, subject to annual reviews, and depending on the scientific focus, may be made at any of the TIFR campuses.

We invite applications for the LIBS postdoctoral fellows program. We encourage applications from candidates with interest in developing and applying AI/ML approaches to varied areas in biology, physics, astronomy/astrophysics and chemistry, including but not limited to the following topics:

Astronomy and Astrophysics: seismology of the Sun and stars, time domain astronomy of pulsars and fast radio bursts, super-resolution computations in cosmology, extracting information from large numbers of radio images of the sun, detection and mitigation of anthropogenic interference signals in radio interferometry data, cosmology and large scale structure function, application of machine learning based methods to astronomical problems and cataloguing/classifying astronomical data

Biological sciences: computational biomolecular structure/dynamics, the study of active matter through hydrodynamics, active matter as a way to understand living systems, human gene function, integrative structural biology, function and dysfunction of neural synapses, neuronal basis of synaptic function, classifying normal and abnormal brain activity, design of multifarious self-assembly systems as a means to study interaction networks in living systems, cancer evolution through the study of mutational patterns, circadian rhythms, cancer and digital

health, climate change, genotype phenotype correlations in tigers, identifying unknown pathogens

Other topics: atmospheric turbulence modelling, computational chemistry and intelligent drug design, fluid mechanics solvers

If you are interested, please send queries or applications to libspostdocs@tifr.res.in. Please include a CV, contact information for 3 reference letter writers, and a statement of interest, preferably in one of the areas highlighted above by **30th January, 2023**. The stipend for LIBS fellows will be attractive. TIFR centres provide excellent working environments with abundant academic freedom and opportunity for growth. Come join our community and make interdisciplinary breakthroughs happen!