



## NATIONAL INSTITUTE OF INDUSTRIAL ENGINEERING (NITIE) MUMBAI

(An autonomous institute under the Ministry of Education, Govt. of India, Vihar Lake Road, Powai, Mumbai – 400087)

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National Institute of Industrial Engineering (NITIE) was founded in 1963 as a collaborative effort between the Government of India and the International Labor Organization. NITIE prepares students for a seamless induction into industry and academia by blending management principles and technical skills. NITIE has been providing solutions to the complex problems of industries. Currently, NITIE has 5 research areas, 3 Postgraduate programs and a Fellow program.

### **Brief about the Project**

The proposes of the study is to examine the univariate and multivariate stochastic volatility pattern of market returns with information spillover using recurrent Long-Short-Term-Memory network. Predicting asset returns is of central importance for empirical, theoretical, and practical considerations. Empirically it involves decomposition of asset returns with respect to the underlying risk factors. One such measure would be accounting for volatility. the unobservability of volatility makes it difficult to evaluate the forecasting performance of Conditional Heteroscedastic models. We also aim to explore Bayesian and Markov networks to evaluate the conditional uncertainties among probability density of market returns. This project attempts to use deep learning models to addresses this problem and therefore improve forecasting.

**NITIE** invites applications from the interested candidates for the position:

**Post:** Research Associate (one year on contract)

**Position:** One

Project Title: Modeling Time Varying Synchronization and Multivariate Stochastic Volatility of Market Returns using Deep Learning.

### **Essential Qualification:**

B.Tech/M.Tech/Equivalent post-graduation in any discipline viz. Sciences/ Engineering/ Management (Finance)/ Econometrics/Statistics.

### **Desirable qualification:**

Good quantitative background with proficiency in quantitative analysis, model building, knowledge, and experience of application of Machine Learning techniques. Strong computation skills with experience in handling software like R, Python. Basic Knowledge of Statistics, Econometrics and Finance would be an added advantage.

**Consolidated monthly Salary: Rs 30,000/- 35,000/- pm** (Consolidated)

Candidates from IIT/NIT/Equivalent Institutes/Universities (with CGPA 7.5 and above) will be preferred. The amount will be fixed based on the qualifications and experience and recommendation of the Selection Committee.

Interested candidates may send their CV by speed or registered post in a sealed envelope subscribed **“Application for Research Associate”** to SRIC Office, National Institute of Industrial Engineering (NITIE), Vihar Lake Road, Mumbai – 400 087 within two weeks from date of this advertisement and fill this online form:

[Click here to Register](#)

Employment is purely temporary and will be for one year. Eligible candidates will be called for an online interview as per the recommendation of the Screening Committee. Fulfilment of minimum qualification is not a claim for an interview call. The Institute reserves the right to reject any/all applications without assigning any reason and call for interview candidates meeting the project requirements. No interim correspondence will be entertained. Candidates applied earlier meeting the criteria can apply again.