

# Rakesh Kumar

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## Research Interest

Working with Prof. S. Thangavelu in the area of Harmonic Analysis.

## Education

- July 2010 **Bachelor in Electrical Engineering and M. Tech in Information & Communication Technology**, Indian Institute of Technology, Delhi, 7.3/10.  
May 2005 **Class XII, CBSE, 85%**.  
May 2003 **Class X, CBSE, 83%**.

## Experience

- Jun 2010 - **Analyst, Estee Advisors Pvt Ltd, Gurgaon.**  
Jul 2011  
◇ *Integrating R in C#*: Designed and coded a GUI in C# for doing bivariate analysis of the signals. It makes use of available R dll. Analysed NSE and BSE market data using this GUI for finding useful trading signals  
◇ *Cash-Future Strategy*: Sole developer and manager of this strategy. We take position between the cash and the futures of a security to make an arbitrage. Probabilistic data of dividends of a script available from Bloomberg UI is also used for optimising profit. Average monthly profit is around 1% of the deployed money  
◇ *Nifty-MiniNifty Strategy*: Sole developer and manager of this strategy. Whenever the spread between Nifty Futures and MiNifty Futures for an equal quantity is greater than a preset threshold, we take position. Success of this strategy depends on the efficiency of the code. Monthly profit of this strategy averages around 2 lakhs  
◇ *Index Replication Strategy*: Worked on the replication of NSE index with lesser securities, thereby developing an arbitrage strategy

## Master Thesis

- Title *Authentication using fingerprint matching*  
Description Minutiae points of a fingerprint image are extracted using Gabor Filtering. With a complete new approach, these minutiae points are used for matching two fingerprint images. Algorithm is tested on IIT Delhi students' fingerprint database.

## Other Qualifications

- Scholarships Awarded scholarship by UGC-CSIR and NBHM in 2013 for pursuing PhD  
Certifications Cleared NSE Certification Exams for Capital Market and Derivatives Market  
Languages Expertise in major programming languages like C++, Java, C#  
Courses Measure Theory, Functional Analysis, Complex Analysis, Fourier Analysis, Wavelets Analysis, Signal Theory, Neural Networks, Estimation and Detection Theory, Network Theory, Analysis and Design of Algorithms, Artificial Intelligence