Speaker: Dr. Sourish Das, Assistant Professor, Chennai Mathematical Institute

Title: Some Perspective on Efficient Market Hypothesis and Multiple Testing Problem

Abstract: Eugene Fama (1960s) in his PhD thesis developed the concept of “Efficient Market Hypothesis (EMH). According to EMH, financial market is “information-efficient”. This results the price of stock to behave like random-walk. In consequence of this, one cannot consistently achieve return in excess of average market return on risk-adjusted basis. However, by late 1990 and early 2000s many empirical studies shown that EMH is not necessarily true. If EMH is true then all the assets in market are always fairly priced; otherwise assets are either under or overpriced. This turns out to be a testing of hypothesis problem, where null hypothesis is EMH is true or assets are fairly priced versus alternative hypothesis as EMH is false or assets are either over/under-priced. As there are thousands of assets, this problem turns out to be a multiple testing problem.

In this talk we will walk through the concepts of EMH, Capital Asset Pricing Model (CAPM) and multiple testing problems. Then I will present Bayesian multiple testing with diffused prior for CAPM for 500 stocks that are considered in S&P 500 index. We present the back-testing (aka out-of-sample performance) of the method for the period from 2008 to 2013.

Note: This is a joint work with Dr. Ananya Lahiri and Dr. Rituparna Sen