UB INVENST Club

Special Interest Group (SIG) on Fintech “Wizards of odds”

Proudly Presents

WOO: the first course

Jointly taught by

Dr. Liu Zhen, Professor of Economics and Dr. Charles Tirone

With Guest Speakers Prof. Dominik Roesch (Finance Department, School of Management)

When: Every Thur Evening (starting Thur 9/27)

Time: 6:30 to 8pm

Where: Davis 310

**Special Lab Sessions** will be held immediately before from 5:30 – 6:30 PM on Thursdays without an Invenst club meeting.

Course objectives:

1. Cross trains students in CSE, Finance and Economics with basic knowledge of Fin-tech
2. Provides a basic understanding of financial decision making, and technical analysis
3. Introduces four basic technical indicators, and tools and platforms to obtain data and
4. Prepares students for building applications that assist financial decision making

Course Outline:

Module 1

1. Database for financial services (by Professor Dominik Roesch)
2. History and success stories of applying Math, Statistics and Computer Sciences to financial services
3. The random nature of financial decision making and various return and risk concepts
4. Four basic technical indicators: Moving Average, MACD, RSI and P&F chart

Assignment: Install Anaconda, use Quandl to access data, start playing!

Module 2

1. A brief introduction to financial innovations and markets: Stocks, Bonds, Insurance, Options, Crypto Currencies
2. The pattern of returns of different asset classes and investment styles
3. The performance of different asset classes during historical events
4. Conservative use of options: Cash Covered Put Writing and Stock Covered Call Writing
5. Demo of tools like ThinkSwim and Stockchart

Assignment: Investigate one historical event (collect the data at Quandl around the event, demonstrate the significance, identify major causes, propose ideas to take the advantage of your knowledge.)

Module 3

1. Section rotation Model and Valueline portfolios
2. Demos: paper money trading
3. Financial data and where to get them: Quandl, brokers, retailers,
4. Quantitative Tools for Finance: Programming language and packages, backtesting platform, brokerage APIs
5. Case study: Design a simple trading strategy and do a very basic backtest

<https://ntguardian.wordpress.com/2018/07/17/stock-data-analysis-python-v2/>

Assignment: Select a simple trading strategy. Use Quantconnect/Anaconda to implement it, do a preliminary backtest.

Module 4:

1. Define small projects to get you started
2. Data processing, data analysis, simulation, trading rule design, intermediate backtesting,
3. Additional case studies: Options, Futures, Portfolio management.

Assignment: Develop an idea and a plan to apply it with your team members.

Module 5:

1. Theory: Why the market is so unpredictable and what is the best way to think do about it?
2. Market efficient hypothesis
3. Adaptive market hypothesis

Assignment: A reading list for your continuing study