Nitesh Bharadwaj Gundavarapu

CONTACT
INFORMATION

Phone: +91 9920280692
Email: ntesh93@gmail.com

Website: `niteshbharadwaj.github.io`

EDUCATION

Indian Institute of Technology Delhi

B.Tech., Electrical Engineering (Power)   **Jul 2011 − May 2015**
CGPA: 8.983/10

INSA de Lyon

Exchange Semester, Genie Electrique   **Fall 2013**

PROFESSIONAL
EXPERIENCE

Finmechanics

Senior Consultant   **July 2015 − present**

Lead developer for FM Converge, a front-back treasury management system built by a small team. Live in more than 10 international banks. Adept at writing scalable, high performant code with efficient caching.

- Currently implementing ***GPU computing*** in rate determining steps for Monte Carlo CVA and market risk module. POC shows 16x performance improvement.
- Co-developed market risk module leveraging ***multi-process*** computing, Hazelcast ***distributed in-memory caching, messaging, LMAX disruptors*** and ***multi-threading***.
    - Computationally efficient with performance reaching ***80000 PVs/core/s***.
    - Capable of 1000x ***full portfolio revaluations*** applied on daily market scenarios over last 10 years. ***AWS*** scalable.
    - Computes Value At Risk in seconds and makes FRTB IMA hardware and cost efficient providing competitive edge.
- Complete ***ownership*** of market data, trader workstation, pricing screen and risk modules.
- Mentoring colleagues in gaining expertise and helping them solve ***convoluted low latency bugs***.
- Developed mission critical PL reports, end of day tasks and tens of analytics screens with extensible, user-definable views.
- ***Published*** a white paper on multi-curve calibration framework that can support arbitrary curve dependencies.
    - 10x improvement in par rate sensitivity calculation through efficient memory management and profiling using ***Yourkit***.
    - 25x improvement in OIS curve calibration performance through functional optimizations.
- Interfaced FM Converge to several quant and math libraries such as ***Quantlib, Numerix, Strata*** over JNI.
- Created pricing library for barriers, touch options and swaptions using ***Stochastic and Monte Carlo models*** and validated them against the market.
- Worked with clients and teams across geographies. Led FM Converge implementation at a Singapore based hedge fund with 50 mio $ AUM.

Robert Bosch

Intern   **May 2014 − July 2014**

Built a camera mounted autonomous robot which can detect obstacles and traverse a path avoiding them. It uses ***openCV*** for computer vision and runs on Raspberry PI.

The Freenet Project - Google Summer of Code 2013,

Intern   **May 2013 − Sep 2013**

Developed an ***Android application*** that automatically synchronises with home freenet node and can be used to exchange node references with peers.

Awards and
Achievements

- Best Solution, Goldman Sachs Quantify 2014, in a Data Modelling and Analytics task, among 300 teams across 7 IITs.
- Recipient of the Charpak Scholarship of Excellence from the Embassy of France.
- Successfully completed the Google Summer of Code 2013
- Recipient of the merit certificate for being among the top 7% of the students.
- Among one of the winners at the Windows Phone 7 Hackathon 2012
- Secured a rank of 742 in IIT JEE and a rank of 62 in AP State Eamcet Examination among over 200,000 engineering aspirants
- Recipient of the 'Student of the year' award from the Times of India Newspaper in Education Program

Programming
Experience

Programming: Java, Python, C++, MATLAB, OOP, Functional Programming, javscript, latex, SQL
Libraries & Frameworks: Hibernate, Spring, Hazelcast, DWR, extjs, mariaDB, MS SQL, Camel, Tomcat, Raspberry PI, Arduino, Android SDK, NDK, openCV, AWS

Course work

Computer Science: Data Structures, Algorithms, Artificial Intelligence, Neural Networks, Computer Architecture, Networks, Databases and Data Mining, Digital Electronics, Introduction to Machine Learning
Mathematics: Probability and Statistics, Operational Research, Introduction to Analysis and Differential Equations, Introduction to Algebra and Matrix

Undergraduate
Projects

Emotion Classification from EEG Data

Guide: Dr. Jayadeva   **July 2014 – Dec 2014**

This is a machine learning project to detect emotions in humans from EEG data. Applied two layer SVMs with feature selection using FCBF and mutual information.

Ultrasonic Ranging in Smartphones,

Guide: Dr. Vinay Ribeiro   **Jan 2014 – May 2014**

Finding distance between smartphones using a time difference of arrival metric on acoustic signals using just their speakers and microphones.

AI Agent for Quoridor

Guide: Dr. Mausam   **Jan 2015 – May 2015**

Developed an agent for Quoridor in C++ and reached the semi-finals of Artificial Intelligence class tournament. Developed strategies to dynamically manage branching factor and depth for mini-max depending on the progress of the game and the time elapsed.

Interests and
Activities

Travelling, Music, Chess, Cricket, Technology, Logical Argumentation, Robotics