Biresh Basak

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A Quantitative research analyst, software architect and developer

– Currently working as *Assistant Professor at Dept of CSE, Techno India University Kolkata*
– Research interests- Data Science, ML, Web Design Techniques
– 15+ years of design and development experience in FinTech and other areas

Interests & Skills

- *Financial Technology* - Equity and Derivative instruments [Portfolio analysis, Risk Mgmt, Yield Curve]
- *Software Development* : Java, C++, JavaScript, Python, MatLab, PHP
- *Softwares:* MS Excel, Visual Basic, MS Access, plugins
- *Others:* SQL, Servlets, Web Services, JSON, AJAX

Academic Experience

❑ **Assistant Professor of Computer Science (Techno India University, Kolkata)** Sep 2019 - current
Recent subjects: Computational Statistics, Data Science, Web Technology, Data Structures & Algorithms, Object-Oriented Programming

❑ **Computer Science & IT Instructor (Treamis World School, Bangalore)** June 2019 - Aug 2019
Teaching students of Standard 10th, 11th and 12th (under CBSE, India)
Subjects : Algorithms, Complexities, Data Structures, RDBMS, Networking

Work Experience

❑ **Bank of America Merrill Lynch (Research Analyst, Credit Risk Management, NY)** 2007 - 2014

A Quantitative Analyst and Software Developer for Counterparty Credit and Capital Risk, primarily doing credit analysis of Fixed Income and Derivative securities using various mathematical models

- Credit Risk models related to financial instruments, like Yield Curves, indices, exchange rates and customized securities for clients
- Worked on implementing scenario generation models for credit spreads, interest rates and default probabilities
- Developing analytics for pricing Mortgage Backed and Asset Backed securities, Credit Default Swaps, Interest Rate Swaps and more for mid-cap and large-cap clients
- Research & implementation of Quantitative models using various methods for valuation and risk management
- Architecture and Development of the UVO (User Valuation Override) methodology – for exotic securities
- Identifying and Stochastic modeling of Market Risk factors
  - Interest Rates, Foreign Exchange, Credit Spread, PSA, Option Adjusted Spread (for Mortgage Backed Securities)
  - Time Series Analysis, PCA decomposition, Regression Analysis
- Tools & Software:- Java, JavaScript and C++, Python, Monte-Carlo Simulation, Risk Factor Sensitivity

❑ **Salomon Smith Barney Inc, Citigroup (VP, Research Analysis, Yield Book, NY)** 2000 - 2007

- One of the main developers of the front-End of 'Yield Book Calculator' – one of the main products of www.Yieldbook.com (now part of FTSE Russell, London) using Java Swing technology
- Developer of the YB-Excel-AddIn using the SOAP paradigm on XML-based design for lightweight clients
- Testing and maintenance of analytics for Mortgage and Asset Backed securities, Interest Rate swaps, futures, derivatives using standard and non-standard methods.
- Developed the web infrastructure of Yield Book XML API (for handling SOAP protocol); helped the group launch Fixed Income analytics services along with Market Data Support. Worked with tech support and trading desk in close coordination with large-cap clients
- Tools & Software :- Java, J2EE, Swing, C++, Servlets, XML API, MS Access/Excel Plugin, SQL

❑ **Federal Express (Memphis, TN)** Mar 1999 - Dec 1999

- Designed and developed client side software application for Aircraft Maintenance and Dispatching System (AMADS) tracking aircrafts' refueling status, maintenance schedules and dispatch assignments on UNIX
- AMADS went on successfully to get customized for running on desktops at FedEx's central command at Memphis, Tennessee and thereafter also to run on handheld tablets for ground officers

❑ **D. E. Shaw India Private Ltd (Hyderabad, India)** 1997 - 1999

- Developed a real-time data display tool called 'Market Maker' for displaying data from Reuters Select Feed to be used by traders at D E Shaw & Co. New York
- The project successfully helped retire their old trading desk readers called Reuters Select Feed reader.

❑ **Frontier Information Technologies Ltd (Hyderabad, India)** 1996 – 1997

- Developed desktop software called "My Briefcase" for PCs and notebooks; helping Business travelers manage documents between their corporate network, PCs and their notebooks.
- The software helped migrate their files to a revision based platform

Education

- **B. Tech** (Comp Sc & Engg), IIT Bombay – 1996
- **MS Mathematics in Finance** (NYU, Courant Institute) – 2010

  (Completed all coursework with credits but thesis partially incomplete due to poor health condition)