Chen Nie

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Education

University of Toronto, Mechanical and Industrial Engineering **Sep 2012 – Present**

Master of Industrial Engineering, (Part-time)

Focus: Operations Research and Information System

University of Toronto, Division of Engineering Science **Sep 2007 - Jun 2012**

Bachelor of Applied Science and Engineering

Major: Engineering Mathematics, Statistics and Finance

Work Experience

Data Analyst **Oct 2013 - Present**

Inflection, Redwood Shore, California USA

- Built Machine Learning model to estimate customer lifetime value (LTV) when they register
- Developed scripts to pull data from APIs from various advertising partners
- Built automated process to help online marketing team collect, store, and analyze large amount of data
- Performed key analysis on various aspect of the business, present data visually and communicate key findings to the team
- Ensured and improved quality and integrity of data to support product development and marketing efforts

Developer/Trading Strategist **Apr 2013 – Sep 2013**

High Frequency Trading, Investment Technology Group, Toronto, Canada

- Developed ultra-high-speed market information and order entry system to enable derivative trading with Montreal Exchange.
- Developed a collection of tools and python modules to facilitate ETF Trading. Tasks include Inventory Management, Profit & Loss Calculation, and Trading System Calibration. (PYTHON, SQL, C++)

Investment Analyst **Aug 2012 – Mar 2013**

Portfolio Solutions Group, Manulife Asset Management, Toronto, Canada

- Developed and maintained a Portfolio Optimization Framework for Fund of Fund, which first performs a comprehensive analysis on Fund Manager's historical returns and then optimizes the asset allocation subject to various business and feasibility constraints.
- Operated and improved the in-house portfolio optimization engine, assisted fund managers to decide on target policy asset mixes for the next year. (MATLAB, MS ACCESS, EXCEL)

Management Consultant (Intern) **Jun 2011 - Aug 2011**

Global Business Service, IBM, Shenzhen, China

- Devised a comprehensive optimization model of Risk Manager personnel scheduling for a major Chinese bank using Mathematical Programming (EXCEL VBA, SOLVER)

Trading Strategist (Intern) **May 2010 - Apr 2011**

High Frequency Trading, Investment Technology Group, Toronto, Canada

- Reverse Engineered the internal market feed protocol used by a Toronto exchange
- Designed and programmed a real-time, ultra-low-latency level 2 market information system from scratch. It was substantially faster than the exchange provided API and the Reuters API, and is used in everyday production, replacing the two APIs mentioned above. (C++,C#)
- Improved and maintained the in-house exchange simulator and trading tools

Courses & Projects

Individual Project, Computational Finance Course **Winter 2013**

- Devised a mathematical model to optimize the pricing of product after BOC decided to eliminate penny.
- Improved the percentage of customer purchase ending in 0 or 5 cents from 23.3% to 79.0%

Project Lead, Information Modelling and Management Course **Winter 2013**

- Developed RDFS/XMLS models for the Toronto Open 311 Service Data
- Translated 200,000 historical service request records from Excel file to RDF/XML
- Developed SPARQL queries that applied Linked Data principles to mashup different data

sources and displayed aggregate information.

Thesis **2011 - 2012**

- Investigated the application of Regime Switching in Portfolio Optimization, a technique to capture extreme and discrete movements in financial markets. (MATLAB)
- Calibrated parameters with Maximum Likelihood Estimation and Hamilton Filter
- Tested Model against S&P 500 data from 1970 to 2011; portfolio proven to be robust.

Project Lead, Financial Optimization Course **Winter 2011**

- Implemented a stochastic programming model using Conditional VaR as utility function for international portfolio management and tested against 11 years of historical data
- Composed an efficient portfolio using MVO and MAD model, Analyzed 2639 NASDAQ stocks, the most in class
- Formulated model with AMPL, MATLAB, R, and PERL

Project Lead, Corporate Finance Course **Winter 2011**

- Designed and Programmed an accounting GUI software using MATLAB & GUIDE

Individual Project, Regression Analysis Course **Winter 2011**

- Applied SAS to analyze data, including Real estate price and Sports Performance

Project Lead, Operating System Course **Spring 2010**

- Implemented multithreading in an experimental Operating System, OS161
- Improved virtual memory system to enforce modularity and to support large program

Project Lead, Engineering Design Course, **Spring 2009**

- Winner of the Engineering Design Award, outperformed other 57 teams
- Led a team of three to design and build an Automatic Storage System
- Programmed 4K line of code in assembly for the PIC Microcontroller
- Designed and implemented a PC end management software using C#

Other Employment Experience

Self-employed **2010-2011**

Textile Engineer Inc., Toronto, Canada

- Co-Founder of the Incorporation, a Business in International Trading
- Main focus is fashionable Goods, Brands including Visvim, Abercrombie & Fitch, FeiYue, OSPOP, Warrior.

Certification

Chartered Financial Analyst: Passed Level I, Level II Candidate

Awards

Engineering Design Award, UT Institute for Aerospace Studies	2009
Queen Elizabeth II Aiming for the Top Scholarship	2008,2007
Gold Medal, Canadian Open Mathematics Competition	2007
Gold Standard, Euclid Math Contest	2007
3rd Place in OAPT provincial physics contest	2006

Others

Activities & Interests: Tennis, Golf, Cycling, Badminton, Photography

Technical Skills

Programming Languages: C, C++, C#, SQL, Python, .NET Framework, SAS, MATLAB, AMPL, CPLEX

Applications: Microsoft Excel, Microsoft Access, Microsoft Word, Microsoft Visual Studio, Subversion, Linux

Others: Quantitative Analysis, Data Modeling, Financial Engineering, Operations Research, Accounting, Regression, Database, Computer Networking, Operating System, Computer Organization.