**Inwha Kang**

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**Summary:**

* 10 years of Financial IT/Consulting Industry experience including 5 years of actuarial application/ software development & testing.
* **Data analysis/data mining, predictive modeling**, risk management, IT service operation management (ITSM) reporting.
* Doctoral studies in Economics, Mathematics, and Cognitive & Neural Systems. Advanced statistical methods including complex multivariate statistical methods, machine learning including Bayesian methods, reinforcement learning, Neural networks, Support vector machines, Hidden Markov Models, Operations Research (Queuing, Markov Models, DEA, Integer Programming, Dynamic programming, Stochastic Programming, Game theory), Advanced quantitative methods including digital signal processing, randomized algorithms, Markov Chain Monte Carlo.
* Proficient with Matlab, R, Excel VBA, SAS (SQL, Macro), JMP, Access, T-SQL, PL SQL, VB.Net, Spring, Eclipse, Visual Studio

**Technical Skills:**

Operating Systems: Windows, Mac, Unix, Solaris, Linux

Languages: Matlab, Octave, Visual Basic, VBA, XML, C/C++, C#/VB.NET, Java, HTML, XHTML, JavaScript, CSS, XML, Python, CPLEX, MySQL, ADO, jQuery, Perl, Ruby on Rails, F#, Scala

Statistics Packages: SAS (macro & SQL), JMP, R, Julia

Databases: Access,DB2, Sybase, Oracle SQL Developer, eSmart, MicroStrategy, T-SQL (MS SQL Server), MySQL, MongoDB

Project Management: SharePoint, MS Project, HRO Maestro

Others: Excel, PowerPoint, Word, OneNote, Outlook, Lotus Note, Wireshark, Calc Builder, Qlikview, Tableau, Cognos

**Education / Credentials:**

* Passed SOA/CAS Exams 1 & 2, working on obtaining SAS Certifications on Advanced Programming and Statistics.
* Doctoral Student, Economics, ***Boston University, Boston, MA* 2003 - 2005**
* MS and Doctoral student, Cognitive & Neural Systems, Mathematics, ***Boston University, Boston, MA*** **1996 - 2002**

***Selected Doctoral Level Courses:***

Advanced Macroeconomics, Advanced Microeconomics, Time series, Differential Equations (ODE, PDE), Dynamical Systems, Advanced Econometrics (Regression Testing), Real Analysis, Advanced Game theory (incl. Evolutionary GT), Functional Analysis, Complex Analysis, Advanced Statistics, Computational Neuroscience, Measure Theoretic Probability Theory, Neural Network Modeling (learning models including Fuzzy ARTMAP, visual perception, auditory perception, motor control),Machine Learning, Pattern Recognition, Signal Processing

***Selected Master’s Level Courses:***

Mathematical Finance, Artificial Intelligence, Financial Accounting, Operation Research, Investment,

Quantitative Optimization & Modeling using Excel

* MS, Molecular Biology, State University of New York, Albany, **1987**
* Graduate School of Medicine, Program in Biochemistry- Seoul National University, Seoul, Korea, **1978**
* BS, Biochemistry - Yonsei University, Seoul, Korea, **1977**

**Professional Experience**

**Consultant** **Mar 2013 – Present**

**Client: Monsanto, St. Louis MO**

**Senior Data Scientist (Optimization Modeling) (Feb 2015 – Present)**

* Supply Chain Business Analytics, Data input automation. Analyze, build, test, and enhance various optimization models, including Crop Placement Model, Safety Stock Model using Substitution, Network Distribution Model, in Global Supply Chain Management and Strategy Development Division.

**Environment:** R, CPLEX, C++, VBA, Oracle, Access, SQL Navigator

**Client: Cisco Systems, Research Triangle Park, NC (Jul 2014 – Nov 2014)**

**Engineer (Report Developer) – Cloud & Managed Services**

* Successfully developed, automated and deployed multiple Reporting Tools, including Daily Global Network Health Report, Device Availability Report, Incident Management Report, Change Management Report, Problem Management Report, Monthly Service Reviews, using VBA, on Bank of America Enterprise Data Network Management Service Operations.
* Evaluated/negotiated requirements and service level agreements (SLA), researched databases, developed key contents needed to construct various Network Operations reports, such as Monthly Service Review, Device Availability Report, and presented findings to the client (Bank of America) via regular meetings.

**Environment:** Excel, eSmart, MicroStrategy, ITSM Remedy, Access, SharePoint, Cisco Prime, Cisco MAP, Qlikview

**Client: Aetna, Inc., Blue Bell, PA (Sep 2013-Jun 2014)**

**Project/Team Lead - UW Systems & Tools Development**

* Developed, tested, maintained Underwriting Software using VBA.
* Analyzed legacy tools and installed enhancements.
* Provided user support.
* Produced a user manual for Underwriting Rate Development Tool.

**Environment:** Excel, VB.NET, Access

**Client: American International Group (AIG), New York, NY (Mar 2013-Jun 2013)**

**Jr. Business Analyst, Global Risk Aggregation Data Team, Enterprise Risk Management, AIG P&C**

* Compiled Data Dictionary for Global Risk Aggregation Project.
* Data integration and data migration support including data mapping, data quality auditing.
* Financial data preparation, enrichment, and name normalization for cross-referencing credit groups and D&B data.
* Wrote and modify complex SQL statements.
* Analyzed insurance policy contracts.

**Environment:** Oracle SQL Developer, Access, Excel, Cognos, SharePoint

**Open Software Integrators, Durham, NC Fall 2012**

**Programmer (Intern)**

* Built a web application using Java, J2EE, JavaScript, JDBC, CouchBase, Linux, Spring 3, SVN, Git, Zimbra, Jira

**Fidelity Workplace Investment Services, Cary, NC Mar 2011 – Aug 2012**

**Software Engineer/Developer - Actuarial Application Development**

* Benefit implementation outsourcing for large/mid-size corporate clients
* Analyzed client-specific requirements and debugged VBA codes to the specification.
* Implemented enhancements of Actuarial Workbook VBA codes for multiple clients.
* Performed unit and regression tests.
* Large scale data analysis using MS Access and Sybase

**Environment:** VBA, ClearCase, MS Access, SQL. SharePoint, Sybase, ADO, EDMS

**Hewitt Associates, LLC, Waltham, MA Jun 2007 – Aug 2010**

**Calc Engine Specialist - Defined Benefit Implementation Services**

* Benefit implementation outsourcing and consulting firm for large/mid-size corporate clients
* Conducted analysis of client-specific pension plan requirements documents, and based on the analysis, successfully completed coding pension plan implementation system using Hewitt proprietary software, Calc Builder, for five major market clients.
* Created massive number of test plans and manual calculations to debug defective codes in Quality Assurance role. Created automated test plans.
* Large scale data analysis using ADB2 mainframe database queries (SQL-like query system) for test case identification and code testing.
* Used MS Excel extensively for majority of the tasks including test plan creation and implementation, including V-lookup and Pivot table.
* Managed multiple client tasks through SDLC with high efficiency.
* Documented task results and progress in the project database.
* Reviewed pension plan benefit regulations and rules.
* Coached colleagues and communicated project status and details with multiple managers and teammates.
* Completed ‘Project Management’ course in addition to many other courses provided by Hewitt.

**Environment:** Calc Builder, Excel, Lotus Note, Mainframe, DB2

**GeoVue, Inc. - Woburn, MA Jan 2006- Oct 2006**

**Senior Analyst /Data Scientist, Professional Services**

* Localization intelligence consulting / Software Company for large franchise corporations.
* Researched and built predictive models by multivariate regression and statistical data processing using JMP, and presented them to clients.
* Estimated nationwide block group level demands and built demand indices for numerous nationwide corporations in retail, financial services, and restaurant industries.
* Analyzed various customer and store survey data, and produced regular reports of the results. Built store site rating indices of clients.
* Customized market optimization software for individual clients for their specific market plan. Assisted designing marketing campaign for clients.
* Used Access for data query and analysis.

**Environment:** JMP, Excel, VB, MSDB, GIS, iSite, iPredict, Access/Oracle DB, Perl, PowerPoint, WebEx

**DxCG, Inc. - Boston, MA Nov 2005 - Dec 2005 Research Associate / Data Scientist, Research and Project Consulting**

* Processed data, using SAS (Macro& SQL), of health insurance claims and built predictive models.
* Assisted developing risk adjustment models of health insurance claims.

**Environment:** SAS, Excel

**Deloitte Consulting, Boston, MA Feb 2005 - Aug 2005 Business Analyst / Data Scientist, Actuarial and Insurance Solutions- Advanced Quantitative Services**

* Researched and developed Insurance Premium Rating variables of Worker’s Compensation, General Liability, Personal Auto, Home Property Insurance Policies to be used in statistical analyses including regression analysis and predictive modeling.
* Produced SAS programs (Macro& SQL) for checking and analyzing insurance transaction data. SQL Integrate
* Researched consumer data and risk analysis for the purpose of predicting consumer behavior and targeting marketing effort.
* Performed retention analysis of insurance policy holders by analyzing the number of consecutive years retained and multiple policy combinations.
* Performed targeted marketing analyses including consumer profile including spending preference and other demographical data.
* Comparative analyses of underwriting principles and pricing guidelines of competitors of our clients.
* Researched clients’ internal and external data sources such as EASI, CENSUS, Dun & Bradstreet, National Fire Records database, etc.
* Prepared project kickoff PowerPoint presentation for client site visits.
* Participated in regular client consultation and project status conferences.

**Environment:** SAS (SQL, Macro), Excel, PowerPoint, Unix

**P/T engagements while pursuing PhD program**

**Homesite Insurance, Boston, MA Jan 2003 - Oct 2003** **Project Consultant / Data Scientist, Risk Management Team**

* Researched portfolio optimization algorithms and operation research literature.
* Developed software for portfolio optimization modeling project to manage property exposure to catastrophic disasters using Conditional Value at Risk method (CPLEX & Matlab) using historical data from **Insurance Service Office**. The goal of this project was to provide underwriters of the company with a decision support system to help them maintain their overall portfolio optimal at all times.
* Gave regular group presentation of the research results and project progress.
* Produced research reports.

**Environment:** CPLEX, Matlab, Excel, Visual Basic, PowerPoint

**Liberty Mutual Insurance, Boston, MA Dec 2002 – Jun 2003**

**Actuarial Intern - Commercial Actuarial Research Division**

* Supported development of strategies for managing terrorism risk exposure.
* Served as a member of a Special Task Force involving multiple corporate executives who met regularly to brainstorm ideas and identify issues in relation to the terrorism risk to the company with respect to the Worker’s Compensation Insurance business line.
* Performed research addressing these issues identified, and produced analysis reports for company-wide internal distribution.
* Queried and analyzed internal and external data sources to compute PML under various terrorism scenarios.
* Evaluated risk management software of multiple vendors including Geographical Information System (GIS).
* Built visual basic macros to quantify and model loss/risk for various scenarios including reinsurance considerations.
* Completed the introductory Actuarial student training program given over 13 week period on basics of rate making, reserving, reinsurance, and underwriting.

**Environment:** Excel, Visual Basic, PowerPoint, SAS