

Yu Zhou

Expert of Data Science and Business Analytics

Proven technology leader and innovative thinker in data science, machine learning/deep learning, statistical/math model, big data/data warehouse and business analytics. Expert in business application developments with various software and database. Created FedEx flight network daily model to address the demand seasonality issue and improved capacity utilization by 15%.

Experience

FedEx Service Revenue Science Fellow

January .2009 – Present

Managing and enhancing FedEx International Flight Network math model, and evaluating the revenue impact of adding or reducing flights. Created international flight daily model to evaluate the impact of demand seasonality on capacity management. The daily model helps FedEx improved capacity utilization by 15%. The technology used included Unix Shell, SAS, JavaScript and Web report.

Various tools are invented/created to gain insight of the business:

- Industrial flight network database using Python, JavaScript/JQuery, Unix shell, and SAS
- USPS Zone database using Python, SAS, XPath, Web scraping
- UPS flight network visualization using Python basemap and NetworkX
- Competitive transit time data online visualization using Tableau Server

Business Analysis

- Retail data segmentation/data mining using SAS E-miner; Collecting, Transforming and Analyzing FedEx and Competitors' transit time data using Java, SAS, SQL, Scenario analysis
- Using CDI (Conversion, Diversion, Incremental) methodology to estimate pickup time upgrade impacts on dropbox and study mode shift. Building the framework to study the impact of pickup time upgrades on incremental volume.

GitHub projects

- Designed and built a neural network to recognize images of different shapes using gradient descent and backpropagation with MATLAB
- Designed and built a text classifier using Python Tensorflow 2.0 sequential model. Weight regulation was added to the model to prevent overfitting.
- Built a text sentiment analyzer by using Python NLTK for tokenization, and Beautiful Soup for XML/HTML parsing, and logistic regression for classification

FedEx Service Sr. Marketing Analyst

January .2003 – January 2009

Forecasting and promotion program evaluation

- FedEx.com online promotion program incremental volume and dilution forecasting.
- Industry forecasting using SAS forecast and auto regression procedures.
- Monthly rolling forecasts at original-destination airport pairs level for FedEx international business using auto regression and ARIMA procedures.

Worked with vendors on various survey questionnaires designs for industry and market research. Designed probability survey sampling plan using D&B database and stratified random sampling technology. Analyzed samples using SAS survey procedures, and prepare presentations

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Programming Skills (Expert Level)

Python, SAS, R, MATLAB, C/C++, Unix/Linux Shell Script, Java, J2EE, JavaScript, JQuery, NodeJS, XML, XPath, HTML, CSS, PHP, Perl, CGI, Apache Web Server, AMPL/CPLEX

Machine Learning (Expert Level)

Linear/Logistic regression, SVM, K-means clustering, Neural network, SK learns, Tensorflow 2.x, Tensorboard, Keras, NLP/NLTK

Database and Architecture (Expert Level)

Oracle, Teradata, SQL, Tableau, NoSQL, Hadoop, MapReduce, MongoDB, HBASE, SPARK, Storm

Certifications and Training

- Machine Learning (Stanford University)
- TensorFlow for deep learning with Python (Udemy)
- SAS EMiner/Survey design
- C++ Unix IPC
- Certified SAS Developer
- Certified Java Developer
- Certified Oracle Associate

Designed, Automated and built FedEx internal procedures

- Automated the weekly guesstimated procedure using TSO/JCL (mainframe), SAS, Unix, DB2, JavaScript and HTML
- Enhanced web based international revenue plan system using SQL, Oracle, Teradata, MS Excel Macro, Java, and Java scripts
- Built various web reports, such as Country Level Report, Load Factor Website, and Exchange rate utilities, using Weblogic/J2EE, Java 2D, HTML and JavaScripts.

Datalogic Consulting
Lead Software Engineer

September 2002 – January 2003

Designed and built Customized Control Access System, which provide user access control on different files or websites with single sign on. Tools and module used included Apache, Mod-Perl, JavaScript, HTML, SQL and SAS

AT&T
Lead Software Developer

August 2000 - September 2002

As the principle software contractor for AT&T's ISE and SNOWT projects, My duties include:

- Software development, upgrades and maintenance using C/C++ on HP-UX and Sun Solaris
- Maintaining and developing Perl scripts to analyze, parse and parse the binary data file to EMBIDC format for VMS machine
- Developing and maintaining server side code using Perl, CGI, Java, Apache and developing client side code using JavaScript and HTML for web report

Stevens Institute of Technology
Research Assistant

September 1997 - August 2000

Batch crystallization kinetics process was **studied** from both solution and particle approach. Mathematical model and software simulation was developed and verified with experimental results.

- Mathematical modeling of batch crystallization using MATLAB
- Computer Simulation of Batch Crystallization with Java and Java Swing

Education

October 2006

Columbia University

New York, NY

Master of Science in Operations Research

May 2001

Stevens Institute of Technology

Hoboken, NJ

Ph.D. candidate in Chemical Engineering

July 1992

Wuhan University

Wuhan, China

Bachelor of Science