Yu-To Chen

Data Scientist Lead

Summary

- Specialty in Big Data analytics, research background in Artificial Intelligence and experiences in developing enterprise software analytic engines.
- Expertise in consumer finance, fraud detection, risk and payment management, policy compliance and web/mobile analytics, as well as online videos recommendation.
- Experience in recruiting, training and retaining as a data scientist lead, as well as hands-on in machine learning and predictive modeling as an individual contributor.

Experience

Data Scientist Lead at Wish - Shopping Made Fun!

July 2017 - Present

Risk and payments:
- Payment fraud detection and prevention by machine learning for mobile-commerce.
- Account-take-over detection and prevention by graph database link analysis.
- Unsupervised learning and fuzzy inference for refund and revenue modeling.

Data Scientist at Affirm, Inc.

June 2015 - July 2017 (2 years 2 months)

Financial planning and analysis:
- Consumer loans repayment, delinquency and prepayment modeling.
- Customer lifetime value (CLV) modeling and forecast of loan portfolio profitability.
- Bayesian A/B testing analysis framework and Multi-Armed bandits.

Sr. Quantitative Analyst at Google

September 2006 - June 2015 (8 years 10 months)

Android Metrics/Google Play:
- Android vs. iOS device transition probability modeling.
- Model-based diagnostics for battery drain of mobile devices.
- Android churn probability modeling and prediction.
- Device deactivation modeling and survival analysis.
- Modeling of customer lifetime values.
- Conversion analysis of Android Apps promotions.
- Automation of dashboards for Android device activities and Google Play digital content revenues.

- Analytics for visibility into mobile user behaviors and market dynamics..

YouTube:

- Innovated YouTube abuse detection and prevention systems.
- YouTube video recommendations by user clustering and discovering of "users like you".
- Visualization and animation for understanding of YouTube user online video watch patterns.
- Detection and identification of viral videos for monetization of video ads.
- Statistical time-series forecast for video view counts.

Risk engineering and Google Checkout:

- Designed real-time transaction fraud models for Google Checkout merchants.
- Innovated direct debit risk models for Google Advertisement systems.
- Fuzzy inference engine for anti money laundering.

Manager of Risk Ops at PayPal
August 2004 - August 2006 (2 years 1 month)

Fraud Detection, Policy Compliance and Anti Money Laundering (AML):

- Innovated fraud detection models and credit scorecards to mitigate on-line payment risks using GLM, Support Vector Machines and similarity search over time-series.
- Designed predictive models by pattern recognition of financial transactions and document classification of web pages for detection of policy violators such as on-line child porn.
- Delivered fuzzy logic AML algorithms and peer group analysis for transaction monitoring of high-risk industries using SQL, C, SAS and UNIX shell scripting.
- Designed statistical models for charge-back loss reserving using Chain-Ladder and Markov Chain Monte Carlo.

Scientist at Metreo, Inc.
2003 - 2004 (2 years)

Pricing Optimization

- Innovated market response models, segmentation, win-loss probability estimation and nonlinear optimization for pricing using Matlab and Java.
- Developed data cleansing tools and database programming for waterfall modeling and profit and loss analysis for pre-sales using SQL and PL/SQL.

Research Engineer at Quova
2002 - 2003 (2 years)

Geo-Location Analytics

- Innovated algorithms to infer geography from Internet IP addresses by deploying Internet infrastructure via trace-routes, hostnames, IP registration & routing delays.

- Designed and implemented data analysis & report generation for GeoLocation coverage and accuracy using Perl with DBI, SQL and PL/SQL with Oracle databases.

Chief Scientist
2001 - 2002 (2 years)

Customer Relationship and Supply Chain Management

- Innovated product fulfillment scoring, valuable customer scoring & value at risk scoring for order fulfillment portfolio management using fuzzy logic by Splus and SAS.
- Implemented demand filtering and demand forecasting using SPC and ARIMA.

Staff Scientist
November 2000 - January 2001 (3 months)

Risk Management

- Designed optimal credit limit assignment for small business inter-firm trading by probabilistic based simulation and queueing theory based approximation using Splus.
- Innovated Markov Chains based credit migration for optimal trading credit re-scoring interval using SAS and UNIX shell scripting.

Computer Scientist at GE Global Research Center
1995 - 2000 (6 years)

Predictive Modeling and Analytics

- Developed SAS systems for risk-based capital regulation including interest rate, prepayment, default, loss severity and cash flows modeling for GE Mortgage Insurance.
- Innovated commercial loan valuation methods using Fuzzy Clustering, logistic regression and Multiple Additive Regression Trees (MART) for GE Commercial Finance.
- Designed target marketing and risk management algorithms using Neural Networks (NN), CART and MARS for GE Financial Assurance.
- Designed auto pricing models using survival analysis and depreciation forecasting models using GLM, ARIMA and additive models for GE Auto Financial Services.
- Re-engineered financial deal process using Markov Chains, Statistical Process Control, CART and Discrete-Event Simulation for GE Structural Finance Group.
- Designed ARIMA and ANFIS models for advertisement demand prediction, sales planning and Yield Management systems for NBC.

Education

Penn State University
PhD, Industrial Engineering and minor in Computer Science, 1990 - 1993
Penn State University
MS, Industrial Engineering, 1988 - 1990
National Central University

BS, Mechanical Engineering, 1981 - 1985
Cheng-Kuo High School

Honors and Awards

OC Award, Keynote speaker at Embedded System Software Consortium, Dashman Award, Whitney Award, Outstanding Alumnus Award

Contact Yu-To on LinkedIn