Ogi Asparouhov

Chief Data Scientist

Orlando, FL - Email me on Indeed: indeed.com/r/Ogi-Asparouhov/06ac9cf914a1cf6c

Chief Data Scientist with extensive experience and expertise inventing and developing solutions in the field of:
o Insurance (Healthcare, P&C, Life) Analytics o Population Health Management
o Customer/ Marketing / Behavioral Analytics
o Advanced Analytics / Predictive Modeling o Disability/Workers Compensation
o Big Data; Risk Assessment
• Manage team of scientists\software engineers\data analysts\content experts, etc. in everyday production process. Personally, trained many data scientists, data specialists, projects managers, salesmen, etc.
• Developed presentation & reports to summarize findings/industry trends to key stakeholders/executive leadership. Experienced in communication with both technical and non-technical team members.
• Expert in machine learning, statistics, feature engineering and big data. Proven record of peer-reviewed journal articles, presentations & invited talks (conference, business stakeholders, panel discussions).
• Developing models utilizing all currently available data types: Structured/Unstructured Data; Public Record/ Socioeconomic Data; Insurance Claims; Clinical Data; Survey Data/HRA, Biometrics.
• Developing any key healthcare industry prediction (Hospitalizations, Bundle payment, ER visits, Costs, Medication Adherence, etc.). Developing unique healthcare predictions that have been independently studied and verified (Stress, Socioeconomic Risk, Motivation, Compliance Score, Acute Impact Index).
• Profiling future Behavioral Patterns by predictive models for: Stress Index; Patient engagement; Depression complications; Mental disorder progression; Medication adherence; Alcohol dependency; Suicide Attempt. Analyzed relationships between 350 Socio-economic Attributes and different Behavioral Patterns.
• Small group renewal underwriting models; IBNR; Workers Compensation/Long Term Disability, End of life; Hospital mortality; Survival analysis of patients with a specific diagnosis.
• Car Insurance Predictions: Persistency/Profitability/Car & Driver Assignment; stress & car accidents;
• Financial predictions: credit scoring; behavioral scoring; creditworthiness/loan application; time of default/ early repayment; private firm default risk; personal income (based on socioeconomic data); database marketing strategy for banks.
• Other areas predictions: Database marketing; Customer retention; Oil & Gas industry; Fantasy Sports, etc.
• Single most important contributor to my company's Predictive Modeling (PM) business growth.
• My healthcare solutions\models provide the means to manage the right people at the right time with the right interventions using the right tools; and achieve the following desired goals: best clinical outcomes and maximization of the Return on Investment (ROI).
• My models won first place with 10.3% better accuracy (~$5M additional savings per 1M insured lives) than the 2d one in 2007 SOA study among all claim-based healthcare predictive modeling vendors in US.
• Sept 2016 independent comparison (done by potential client) of my 8-years old models & the models of XYZ (renowned & respected healthcare consulting company, SOA 2016 winner). My models identified top 1% (871) managed members with […] IP days\1,313 ER visits more than XYZ's models.
• Netflix Predictive Modeling Prize ($1M: https://en.wikipedia.org/wiki/Netflix_Prize). 30,000 teams & 120,000 data scientists world-wide participated in this contest. Our 2-scientists team reached 7th place, working only two months. We exited the contest due to lack of time.
Willing to relocate: Anywhere
Authorized to work in the US for any employer

WORK EXPERIENCE

Chief Data Scientist

MEDai, Inc - Orlando, FL - September 2000 to September 2017

Created models for baseball player rankings: Models for Pitching - Earned Run Average, Innings Pitched, At Bats Against, Wins, Hits Allowed, Strikeouts, Walks; Models for
Offense - At Bats, Hits, Home Runs, Intentional Walks, Runs, Singles, and Models for Defense.

Chief Data Scientist

MEDai, Inc - Orlando, FL - September 2000 to February 2017

2013)
Single most important contributor of company's PM business growth within the first several years of joining the team. Personally, initiated, directed, developed, tested and implemented large number of healthcare PM and risk
stratification solutions using wide variety of clinical data including but not limited to payer claims data, Health Risk Assessment (HRA), Socioeconomic (SE) attributes/Public record data, biometrics and lab data, hospital claims data, hospital real-time data received via HL7 and other general consumer and demographics data.

On health plan side, enriched company's predictive modeling portfolio with many individual patient level predictions for customizable time periods in the future, based on different data sources:

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o Common industry standard predictions:
o Cost (total, medical, pharmacy); Hospitalization/ Length of Stay (LOS), Emergency Room visits
o Small group renewal underwriting models
o Concurrent Risk Models (based on diagnoses and drugs): current year utilization, LOS and ER visits. These models are largely used for physician evaluation and payment methodology based on comparison of actual versus risk adjusted expected outcomes.
o Medication adherence (overall and drug class specific)
o Health Risk Assessment (HRA) models - incorporated medical and Rx claims data with questionnaire data (lifestyle, personal health history) to improve the predictions' accuracy
o Bundle payment solutions for hip and knee replacement, CABG and bariatric surgery
o Long Term disability - prediction of future claims/costs; Workers Compensations.

o Unique predictions in the healthcare market:
o Socioeconomic Attributes-based Risk Scores for prediction of future cost, hospitalization, emergency, readmission, adherence, motivation, depression complications, MHSA severity
o Stress Index - identification of patients with conditions that are direct effects of stress or where stress is a major driver. Stress Index can capture hidden future costs or the onset of high cost future complications/events that are difficult to identify with standard industry predictions. It is the first real industry integration of Med&Rx data with Socioeconomic data
o Risk Drivers - 174 clinically meaningful drivers of future risk in very clear and actionable format
o Motivational Index \ Patient Engagement - identification of health plan members who are more motivated to self-manage their health care, comply with instructions from health care providers and pursue ways to improve or maintain their health status
o Chronic Impact Score - stratifying patients by the savings potential related to the guidelines compliance and proper management of chronic conditions and preventions
o Acute Impact Score - solution for stratifying patients by the risk of "predictable" acute cost
o Medication Therapy Management (MTM) using Intervention Priority Score (IPS): IPS has outperformed the CMS's criteria, in superior selection of the right subpopulations for MTM.

o Predictive modeling projects in research phase:

o Integration of Med&Rx claim-based data with SE attributes for prediction of future healthcare outcomes: cost, hospitalization, emergency, readmission, adherence, motivation, etc.
o Disease progression models for key chronic conditions: Diabetes, CAD, Asthma, Depression etc.
o Disease and condition specific complications, e.g. Heart Failure, Pneumonia etc.
o Personalization and prioritization of the disease management procedures and interventions

On hospital side, developed solutions based on real-time EMR data and other hospital data sources:
o Risk of 30-day Readmission, Hospital Acquired Infections (Sepsis, Pneumonia, UTI), Prediction of Length of Stay (LOS), Risk of transfer into ICU, Mortality: The solution provides real-time predictions and alert on potential risks early on, when intervention and prevention are still possible.
o Risk of 30-day Readmission based on more than 400 SE attributes and admission diagnosis.
From retrospective, claims type hospital data developed the following solutions:
o Disease specific Severity adjustment models for more than 60;
o Overall Inpatient Severity Model.

Customer\Marketing\Insurance\Financial\Other Analytics Projects
1. Collaborative filtering (automatic predictions\filtering about the customer's interests) - Netflix prize ($1M: https://en.wikipedia.org/wiki/Netflix_Prize): Open competition for the best collaborative filtering algorithm to predict user ratings for films. 30,000 teams & 120,000 data scientists world-wide participated in this

contest. Our 2-scientists team reached 7th place, working only two months. We exited the contest due to lack of time.
2. Database marketing is a form of direct marketing using databases of current or potential customers to generate personalized communications to promote a product or service for marketing purposes.
o Health Insurance Customer retention: Evaluate customer risk of churning; Determine what products are best suited to existing customers; Develop a proactive business plan for at-risk customers
o Database Marketing strategy for car dealers: The solution developed targeted database marketing - spend your advertising dollars wisely only on the people who are your potential buyers.
o Database Marketing strategy for banks: identification of people with high likelihood to respond to letter invitation of opening a new bank account
3. Automotive Insurance Predictions
o Persistency Problem: new business renewal prediction; Long Term Value (LTV) prediction; an existing client renewals and elasticity, i.e., the effect of changing premiums.
o Profitability Problem: predict the loss; predict the loss over a certain threshold; predict the members with the highest loss.
o Car/Driver Assignment Problem: determine the probability of which driver is driving which automobile in an environment where there are multiple drivers and multiple automobiles.
o Analyzing correlation between car accidents and driver's stress level. Next step is: prediction of car accident likelihood based on car history, driver history and driver's stress level.
4. Financial predictions:
o credit scoring; behavioral scoring;
o creditworthiness of borrowers/loan application; time of default/early repayment;
o measuring private firm default risk;
o personal income (based on socioeconomic data);
o database marketing strategy for banks: identification of people with high likelihood to respond to letter invitation of opening a new bank account.
5. Oil & Gas production and exploration (2009-2013): permeability prediction from well logs and hydraulic flow units of crude oil systems, reservoir characteristic and PVT properties of crude oil systems; identifying

flow regimes and liquid-holdup in horizontal/vertical multiphase flow; lithofacies and reservoir formation identification from well logs, seismic analysis, estimating rock mechanics properties of reservoir to enhance its oil and gas recovery, production and exploration.

EDUCATION

Technical University - Sofia, BG

Ph. D. in Pattern Recognition in Pattern Recognition
Faculty of Automation

M.Sc. in Applied Mathematics in Applied Mathematics
Faculty of Applied Mathematics and Informatics

M.Sc. in Cybernetics in Cybernetics
Faculty of Automation

SKILLS

SAS. (2 years), SPSS (10+ years), SQL (2 years), MATLAB (10+ years), R (2 years)

LINKS

https://www.linkedin.com/in/ognian-ogi-asparouhov-1194475

ADDITIONAL INFORMATION

TECHNICAL SKILLS
o Expert in MATLAB, SPSS;
o Proficient in R, H2O;
o Familiarity with SQL, SAS.