Ravil Bikmetov, PhD

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Education

Ph.D. in Optical Science and Engineering, GPA: 4.0	University of North Carolina at Charlotte
M.S. in Computer Science, concentration: Data Science, GPA: 4.0	University of North Carolina at Charlotte
M.S. and B.S. in Telecommunications, GPA: 4.0	Siberian State University of Telecommunications and Information Sciences

Summary

- 5 years of experience in data mining, big data analytics, and quantitative analyses;
- 4 years of work experience with medical and related databases: claims, CMS, RxNorm, FDA;
- Strong understanding of statistical techniques (regression, classification, sampling, etc.);
- Knowledge of machine learning models using various datasets (time series and big data), libraries (Pandas, numpy, Scikit-learn, Tensorflow, PyTorch) and data visualization techniques and tools;
- Strong scientific programming and modeling, analytical problem solving, and technical writing skills.

Skills Matrix

Database languages: SQL Server and SSMS, MySQL (advanced), Oracle, MongoDB and Studio 3T (intermediate);
Statistical Analysis Tools: R and RStudio, Matlab (advanced), SAS (intermediate);
Data Visualization Tools: Jump, Tableau, Python (matplotlib), R (ggplot2).
Programming Languages: Python, C, C++ (upper-intermediate), Java (intermediate), Hadoop;
Optimization software: Gurobi, Matlab (advanced), Arena (upper-intermediate).

Completed projects

- At Tabula Rasa Healthcare:
  - Commercial medication risk stratification (SQL Server, C#);
  - Automation of medication risk stratification reporting;
  - Risk of adverse event for COVID-19 repurposed drugs (SQL Server, R, Python);
  - Medical expenditure vs risk analysis using claims data: parts A, B, and D (SQL Server, R);
  - Anticholinergic and sedative burden risks of different drug regimens.
- Included in my dissertation:
  - Development of layered architecture and decision-making framework for automated charging stations;
  - Development of analytical simulation platform for automated charging station (Matlab and Gurobi);
  - Development of analytical model for dynamic load scheduling (Matlab and Gurobi);
  - Dynamic energy capacity planning and estimation of renewable energy generation (R, Matlab);
- Included in my M.S. in Computer Science research work:
  - Predictive Analysis of Traffic Violations (Excel Miner, Python);
  - Sales Prediction for Rossman Store Data (R, R Studio);
  - Data Analysis on PIMA Indian Diabetes Database (R, R Studio);
  - Development of Database for Internship Tracking (MySQL and PHP).

Relevant work experience

Tabula Rasa Healthcare | Research Data Scientist	*Orlando, FL | Jun 2019 – Present*

- Carrying out quantitative analyses: risk stratification, medical expenditure, bioinformatic and pharmacoinformatic studies;
- Automation of report generation for conducted analyses;
- Applying ETL procedures for data collection, cleaning, and preparation for further analyses;
- Manipulating and analyzing large datasets, e.g., from insurance claims, medicare and medical research databases, maintaining data quality and integrity;
- Setting up and maintaining databases (RxNorm, FAERS, RiskStratification, etc.) with detailed documentation;
- Preparing progress reports and data requests;
- Supporting proposals and grant writing activities;
- Collaborating with an interdisciplinary team of clinical scientists, data scientists, software engineers, and statisticians.

University of North Carolina at Charlotte | Research Assistant	*Charlotte, NC | Aug 2013 – Jan 2019*

- Data profiling, identification of data sources using confusion matrix;
- Exploratory data analysis, evaluation (e.g., using KPIs) and pre-processing following by solution proposal;
- Assessing model performance and accuracy through various tools (ROC curve, R^2 statistics, etc.);
- Application of various data mining techniques: clustering of energy users and loads, association rules between scheduling events, user feature selection for energy load scheduling, etc.;
- Application of time series datasets for renewable energy generation estimation and big data for sales prediction;
- Developing data models best suited to a specific scenario and operating conditions:
  - Classification of electric vehicles for charging (Decision Trees, Random Forest);
  - Estimation of renewable energy generation (multi-linear regression, Random Forest);
- Development of optimization, predictive analysis, and perform ensemble modeling:
  - Multi-level decision making framework for optimized scheduling of electric vehicles charging;
  - Data-driven operation optimization of automated charging station for autonomous electric vehicles;
  - Algorithm for optimized dynamic scheduling of electric loads in residential domain;
  - Predictive analysis of sales using multilinear regression and traffic violations using classification trees;
- Preparation of comprehensive technical reports and qualitative analyses using data visualization techniques;
- Leading and coordinating several undergraduate and master's level research projects.

Licenses and certifications:

- WVASE Data Analysis Fundamentals (J.A. Woollam);
- The Data Science of Health Informatics (Johns Hopkins University).

Honors & Awards:

- Runner up in Tech Beach Hackathon;
- Runner up in 19th Annual Graduate Research Symposium;
- Recipient of 2018-2019 Lucille P. and Edward C. Giles Dissertation-Year Graduate Fellowship Graduate;
- Teaching Assistantship Award;
- Graduate Teaching Assistantship Recognition;
- Runner up in 16th Annual Graduate Research Symposium;
- Graduate Assistantship Structured Cabling System.

Organizations and memberships:

- HIMSS: Feb 2019 – present;
- AHIMA: May 2020 – present;
- AMIA: May 2020 – present.