

Mehdi Sattari

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CAREER SUMMARY

- Data scientist published more than 30 scientific papers since 2009.
- Expert in data mining and model development for classification and regression problems for about 10 years.
- Developed more than 50 predictive models using various machine-learning techniques (ANNs, GEP, SVM, etc.) in MATLAB, Python, and R.
- Worked with Amazon Web Services (AWS).
- Worked in Agile development environment.
- Amateur C++ programmer since 1999.

DATA SCIENCE SKILLS

- **Data Analysis (Quantitative/Qualitative):** Uni/Bi/Multivariate Analysis, Data Preparation, Outlier Detection, Data Cleansing, Clustering.
- **Predictive Modeling:** Regression, Classification, Time Series, Deep Learning
- **Machine Learning Algorithms:** Decision Tree, Random Forest, Logistic Regression, Artificial Neural Networks (ANNs), Support Vector Machine (SVM), Genetic Algorithm, Gene Expression Programming, Cluster Analysis, GradientBoost, AdaBoost, and many more.
- **Feature Selection:** Principle Component Analysis (PCA), Factor Analysis (FA), Independent Component Analysis (ICA), Evolutionary feature selection (Genetic Algorithm, Particle Swarm Optimization, etc.)
- **Data Mining:** Rapid Miner, SPSS, Python, MATLAB
- **Data Visualization:** Power BI, Tableau, Microsoft Excel, BIME
- **Natural Language Processing:** NLTK
- **Image Processing:** OpenCV, Scikit-image
- **Database Handling:** Microsoft SQL Server, Amazon Redshift SQL, MySQL
- **Narrative Reports and Forecasts**
- **Python Libraries:** Pandas, Numpy, Scikit-learn, SciPy, Matplotlib, Seaborn, Beautiful Soup, Keras, Tensorflow, NLTK, OpenCV, Scikit-image, dask, PySpark, and many more.

INFORMATIC SKILLS

- **Programming:** Python (Parallel Processing), MATLAB, C/C++
- **Microsoft Office:** Word, Excel, Power Point, Visio
- **Operating System:** Microsoft Windows, Ubuntu Linux
- **Excellent General Computer Knowledge**

WORK EXPERIENCE

Lead Data Scientist (Full Time)

09/2018 – To date

Metonymy, Blake Group, Durban, South Africa

Metonymy is providing data analytics services to other departments at Blake Group and owns two main products; Traceps and The Virtual Agent (TVA). **Traceps** is the nation's leading online debtor tracing tool and provides data solutions and services to a variety of entities, including investigators, tracing agents, debt collectors, law firms, and more. On the other hand, **TVA** is a modified version of Traceps, which had been designed to change the Real Estate Industry and it is being used by real estate agents. **Wi-Fire** is a product of another division of Blake Group, named Ctrlroom, which is a platform for Wi-Fi networks provided by coffee shops and shopping centres. Wi-fire is a tool for real-time engagement and a better understanding of the customers through analytics, and facilitates the targeted advertisement by having the customers' details such as gender and age using the power of Traceps database.

Key responsibilities:

- Providing data analytics solutions to other divisions.
- Performing data mining and data auditing.
- Performing data cleansing and refining existing data stored in Amazon Redshift database.
- Modifying/improving available dashboards and insights for Wi-fire product using BIME.
- Developing prediction models in Python and R for Traceps, TVA and Wifire products.
- Solving data-analytics problems.
- Analyzing clients KPIs and writing narrative reports.

Achievements:

- Developed three propensity to buy models to find the potential customers for running sales campaigns.
- Developed a prediction model in Python for estimating the propensity to buy for potential property buyers for The Virtual Agent (TVA) product.
- Developed a multiprocessor and multithreaded webpage scraper in python to extract keywords from the webpage content.
- Developed an initial URL categorizer model based on the content of 50,000 webpages; but the full model is under development using Natural Language Processing package (i.e. NLTK) and Neural Network algorithm for 3.5 million URLs.

- Developed a multithreaded webpage scraper to extract the properties listed on privateproperties.co.za website.
- Found more than 10 data discrepancies and bugs in the Wi-fire product database and TVA front end.
- Performed data cleansing and refined existing data stored in Microsoft SQL Server and Amazon Redshift databases, and worked with Amazon EC2 instances.
- Modified and fixed several bugs in BIME dashboards and insights for Wi-fire product.
- Analysed clients KPIs and wrote two narrative reports monthly.

Data Science Researcher (Full Time)

06/2017 – 05/2018

Environmental Pollution and Remediation Research Group (EPRG), Mangosuthu University of Technology, Durban, South Africa

The Environmental Pollution and Remediation Research Group (EPRG), is making strides in identifying environmental pollution and developing mitigation measures. The main focus of the research group is to work towards developing new technology and improving on existing technology for application at a local level.

Key responsibilities:

- Applying the data science and analytics in the field of Chemical Engineering, mainly developing a model for the prediction of liquid surface tension of gases.
- Analyzing data and removing redundant records.
- Developing predictive regression models in MATLAB and Python.
- Visualizing results using MATLAB and Microsoft Excel.
- Publishing findings in scientific journals.

Achievements:

- Translated the chemical structure of chemicals to numerical data.
- Analysed data and removed redundant records.
- Developed a predictive regression model using Gene Expression Programming and published one scientific paper.

Data Science Researcher (Full Time)

05/2015 – 05/2017

Thermodynamic Research Unit (TRU), University of KwaZulu-Natal, Durban, South Africa

The Thermodynamic Research Unit laboratories are well-equipped with an extensive range of equipment for the measurement of thermodynamic properties and phase behaviour studies. TRU also performs research on development of prediction models to estimate the properties of chemical compounds for which the experimental data are not available in the literature.

Key responsibilities:

- Developing prediction models to estimate the properties of chemical compounds.
- Analyzing data and removing redundant records.
- Developing classification and regression models in MATLAB and Python.
- Visualizing results using MATLAB and Microsoft Excel.
- Publishing findings in scientific articles.

Achievements:

- Used various datasets, performed the data cleansing and removed abnormal data and outliers.
- Used clustering algorithms to classify chemicals into different subgroups.
- Developed more than 10 prediction models by means of various machine learning algorithms including Neural Networks, Support Vector Machine, Gene Expression Programming and Logistic Regression.
- Published eight scientific papers.

Freelancer Data Scientist and Programmer

11/2007 – 06/2012

Achievements:

- Applied data science in the field of Chemical Engineering and used Genetic Algorithm and Multiple Linear Regression (GA-MLR) and Genetic Programming techniques.
- Published six scientific papers.
- Software security consultant for Manshoor-E Simin Co., s hardware lock (dongle) manufacturer.
- Wrote an anti-reverse engineering program to protect executable files (application cryptor)
- Wrote a CD Lock program based on bad sector reading mechanism.
- Wrote an anti-anti-cheat program (CS Cheater) to bypass and disable sXe Injected anti-cheat program for Counter Strike v1.6 game.

EDUCATION

M.Sc. , Computer Science, University of KwaZulu-Natal	2019–To date
Ph.D. , Chemical Engineering, University of KwaZulu-Natal	2012–2015
M.Sc. , Polymer Engineering, Tarbiat Modares University	2003–2006
B.Sc. , Chemical Engineering, University of Tehran	1998–2003

COURSES COMPLETED

- Learning Python for Data Analysis and Visualization
- Data Science and Machine Learning Bootcamp with R
- Power BI A-Z: Hands-On Power BI Training For Data Science
- Tableau 10 A-Z: Hands-On Tableau Training For Data Science
- The Ultimate MySQL Bootcamp - Go from SQL Beginner to Expert

REFERENCES

Available upon request.