

# KAGAN CENAN

## Data Scientist

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### SUMMARY

I am a Global Talent Visa holder in the UK with a demonstrated career of 4 years in data science and 2 years in mobile application development. My expertise includes the entire lifecycle of end-to-end model development, from problem scoping and solution design to prototyping, deployment, and monitoring. I have successfully completed customer, sales, pricing and production-focused projects, tackling complex business problems. I possess a deep understanding of predictive modeling, machine learning, regression and classification techniques, and algorithms. I have strong programming skills in Python and have worked in both corporate and start-up environments. I am rigorous and curious in converting data into meaningful business insights, ultimately enabling commercial advantages.

### WORK EXPERIENCE

**Crane Building Services & Utilities | Data Scientist** | Ipswich, United Kingdom Jul 2021 – Apr 2023

- Conducted customer segmentation for 1000+ customers based on their spending behaviour using the RFM technique. The segmentation led to a 25% reduction in customer churn for the selected segment.
- Developed a Price Optimization Tool to determine the most profitable price for customers. The tool classified all claims and sales and identified potential opportunities and high discount ratios for the sales team. The tool saved 180 hours of analysis per year and increased profits by 10% for the targeted customers.
- Created a demand forecast tool using time-series algorithms, which improved forecast accuracy by 30%.
- Presented all the project findings and data insights to senior stakeholders up to C-level to assist in their business decision-making process.

**TUPRAS | Team Lead Data Scientist & Data Scientist** | Istanbul, Turkey May 2019 – May 2021

- Identified and resolved potential and existing technical problems, implemented process optimizations, and increased revenue by presenting all the project findings and data insights to senior stakeholders for Turkey's largest industrial company.
- Developed a generic prediction program that simplifies data collection, preprocessing, modelling, and deployment processes. Engineers were able to track product quality in real-time, leading to improved product quality tracking and preventing deteriorations, which in turn resulted in an annual profit increase of \$2M.
- Reduced hydrogen production costs by \$3M (3%) using linear programming optimization techniques.
- Utilized regression-based machine learning algorithms to forecast crack spreads, leading to a 15% improvement compared to the finance team's methods.
- Developed a predictive maintenance tool to track cleaning times for units, enabling engineers to plan and optimize the process in advance.

**Valensas | Lead iOS Developer & iOS Developer** | Istanbul, Turkey Jun 2017 – May 2019

- Led a team of 6 iOS developers to create TOSLA, a finance app used by millions of users.
- Collaborated with the backend and UI teams to identify and address security and functionality gaps.
- Developed mobile applications, including Yemeksepeti, Ergo'm Mobile, and TfxTarget, used by millions of users.

**Molocate App | Co-Founder** | Istanbul, Turkey Aug 2015 – Nov 2016

- Developed and co-founded Molocate, a location based social media app used by over 10,000 users.
- Led sub-teams, including campus, marketing, business development, and social media teams.
- Secured an investment from the FacebookStart program.

### SKILLS

**Programming Tools** Python(Pandas, Dash, Numpy, H2O, PyTorch, Pulp, Scikit), R, SQL, Swift, Java, C/C++, MATLAB  
RShiny, Jupyter, Git, Docker, Airflow, Gitlab CI/CD, Pentaho, SageMaker, PowerBI, XCode,  
SourceTree, JIRA, Trello, MS Office Programs, Agile, Adobe Photoshop, Sketch, OpenCV

**Interests** Travelling, Musicals, Basketball, Football, Yoga

### EDUCATION & CERTIFICATION

**Artificial Intelligence for Trading Nanodegree Program** | Udacity | Istanbul, Turkey Aug 2020 – Apr 2021

**Koç University** | Graduate School of Business | Istanbul, Turkey Sep 2019 – Jul 2020  
Data Science Certificate Program

**Koç University** | College of Engineering | Istanbul, Turkey Sep 2012 – Jun 2018  
Bachelor of Science, Electrical and Electronics Engineering | 100% Merit Scholarship

## PROJECTS

### **Demand Forecast Project**

The tool aimed to improve the accuracy of demand forecasting for the company. The tool uses SARIMA to forecast sales and find the best parameters for the model. It analyzes historical sales data to identify patterns and seasonality and uses this information to predict future sales. The tool provides visualizations of the data and the forecast to make it easy for users to understand the results. By increasing the accuracy of sales forecasting by 30%, the tool enabled the company to make more informed decisions about inventory management, production planning, and resource allocation. This led to reduced waste, avoided stockouts, and increased customer satisfaction and profitability.

### **Price Optimization Tool**

The project aimed to create a dashboard that would help the business team identify opportunities to adjust discount rates and provide a summary of customer purchases. The business had different pricing structures and determined discount rates based on seven different discount variations. Using four years of sales data, I developed a regression model that considered features such as purchase package and customer segment to identify customers with a high or low discount. The model helped determine which customers could potentially have their prices adjusted to increase profitability while minimizing the risk of volume loss. The resulting dashboard allowed the project team to adjust prices and view estimated sales for the future. The dashboard also provided filtering options for customer segments, total sales, project, loyalty term, and other variables. With this tool, the business team could make informed decisions about adjusting discount rates and maximize profitability.

### **Customer Segmentation**

The project aimed to address the issue of an insufficient sales team and the need to determine discount rates based on customer behavior. The solution involved dividing customers into various segments using their spending behavior and predicting their customer lifetime value (CLV) using RFM and CLV calculation techniques. This was done using clustering and regression techniques, resulting as the clustering of customers into seven segments including Potential, Partner, Churn Risk, Transactional, Delivering Prospect, and Down traders. The outputs from the project helped the marketing and sales team to make informed strategy decisions. Despite a 25% decrease in market share across the business, the team was able to increase the share for the selected customers.

### **AQE - Advance Quality Estimator**

The project aimed to address the issue of limited lab measurement and time-consuming product collection in an oil refinery by developing a model to estimate instant product quality based on related sensor data. The team developed a generic end-to-end modeling tool that allows chemistry engineers to select the product and related sensors, and the program collects and pre-processes data, models it automatically with selection of best parameters up to the cost function, and deploys, schedules, and visualizes the results synchronously. As a result, the prediction accuracy of the product quality was within the lab measurement confidence level, and engineers were able to track product quality instantly instead of relying on daily lab measurements. In six months, the team operated three products, and with the prior detection of product deterioration, they saved more than \$2M, preventing money-losing operations.

### **Hydrogen Network Optimization**

The project aimed to minimize the cost of hydrogen production by optimizing chemical ratios and unit conditions in three different hydrogen production units in a refinery, along with optimizing other factors such as furnace temperature, steam-to-carbon ratio, and natural gas quantity. To achieve this, a decision support system was developed using linear programming techniques and the CPLEX optimizer in Python, with a machine learning algorithm used to obtain the ratios of chemical molecules from past data. This system allowed operation engineers to adjust unit conditions and chemical proportions hourly. The cost minimization achieved by the system was \$3 million.

### **Crack Margin**

The project involves developing a program to forecast oil products prices crack margin/ spread using machine learning algorithms. The program is utilized by the finance and planning team to make informed decisions about purchasing crude oil and refining units based on profitability. The model is reported to forecast prices with an accuracy of 5% better than the finance team's predictions. This has resulted in optimized operations, reduced costs, and increased profitability for the company. Regression algorithms were used in developing the model.

### **On-line Spalling**

The project aimed to predict the optimal cleaning time for a production pipe in one of the units, which tends to accumulate dirt at high temperatures, leading to a decrease in production yield. We realized that if they could create a model that predicts the cleaning time, they could plan the cleaning operation before the yield drops. To achieve this goal, a classification model was developed that predicted the number of days left before the optimal cleaning time. The model used historical data on pipe dirtiness and yield to identify patterns and make predictions. The model was successful in predicting the optimal cleaning time for the pipe, enabling the team to plan cleaning operations in advance and prevent yield drops. This approach helped to reduce downtime, improve production efficiency, and increase overall yield.