

STATEMENT OF PURPOSE

RAHUL KUMAR

I, Rahul Kumar, am eager to pursue the M.Sc. in Data Science at Warsaw University of Technology in Poland to advance my career and deepen my theoretical knowledge in this dynamic field. My background in mechanical engineering, coupled with extensive experience in data science, has equipped me with strong skills in data analysis, machine learning, and predictive modelling. While I have a solid foundation, I recognize the need to stay updated with the latest advancements in this rapidly evolving domain. The M.Sc. program will not only enhance my technical abilities but also immerse me in rigorous academic research, fostering innovation and strategic problem-solving. By broadening my expertise, I aim to contribute more effectively to the strategic objectives of future organizations, leveraging data science to create impactful solutions and drive success in an ever-changing landscape.

My academic journey began with a Bachelor's in Mechanical Engineering from Kaunas University of Technology in Lithuania, completed in June 2019. This education laid the groundwork for my engineering knowledge and analytical skills. To further expand my understanding of data science, I pursued a Data Science Certification Course at Ivy Professional School in Delhi, India, from November 2020 to March 2022. This program allowed me to delve into advanced data science techniques and methodologies, including machine learning and deep learning.

I have developed expertise in tools such as Python (Pandas, NumPy, Scikit-learn, TensorFlow, Keras), R, SQL, Spark, Hadoop, and advanced Excel. My skills cover machine learning algorithms like Linear Regression, Logistic Regression, K-Nearest Neighbours (KNN), Random Forest, Decision Trees, and Support Vector Machines (SVM). I also have experience designing artificial neural networks (ANN) for complex predictive modelling tasks and forecasting models such as Exponential Smoothing, ARIMA, and SARIMA. My proficiency extends to working with both SQL and NoSQL databases, as well as data analysis tools like Sqoop, Pig, and Spark SQL. A key project I worked on was Credit Risk Modelling, where I used Python to develop a comprehensive model, achieving an 80% accuracy with XGBoost.

In 2020, I co-authored a publication titled "Mechanical Properties Comparison of Steel and Carbon Fiber Composite Frame," featured in the Grant Journal, which compared materials for car seat backrests. Additionally, I have almost four years of experience in data science. My journey began with a traineeship at the Technical University of Liberec in Czechia, where I worked on comparing mechanical properties of steel and carbon fibre composite frames. I then worked as a Data Analyst at THB in India, analysing data from over 20 sources for a healthcare project. Subsequently, I joined Kreate Global as a Research Data Scientist, where I created a multiple linear regression (MLR) model that reduced the mean absolute percentage error (MAPE) by 10%. I also led projects on cloud movement prediction and designed machine learning solutions for various applications.

Currently, I work as a Data Scientist at Mastercard, where I analyse large datasets and employ machine learning techniques such as ensemble methods and deep learning for tasks like fraud detection and credit scoring. I have achieved significant results, including 92% accuracy in fraud detection using artificial neural networks (ANN). Collaborating closely with cross-functional teams, I ensure that machine learning solutions are integrated seamlessly into business processes.

At this pivotal point in my career, I have chosen to pursue an M.Sc. in Data Science at Warsaw University of Technology to further my global perspective and expertise. Poland's renowned education system, affordable tuition, and vibrant cultural environment make it an ideal destination for my studies. The

country's central location in Europe also provides excellent opportunities for travel, networking, and collaboration with a diverse student body. Additionally, Warsaw University of Technology is a prestigious institution with a strong reputation in research and innovation, particularly in data science, which aligns perfectly with my career goals.

The M.Sc. program in Data Science, offered by the Faculty of Mathematics and Information Science, is among the first European programs in Data Science and focuses on data engineering and data analytics. The program equips students with in-depth knowledge and skills to process and analyse the growing volumes of data. It covers both structured and unstructured data, with particular emphasis on natural language processing and the analysis of network data, including social networks. Students also develop strong programming skills in languages like Python, and gain hands-on experience with Big Data processing platforms such as Apache and Cloud Computing, through partnerships with top cloud providers.

As part of the program, key attention is given to Machine Learning methods, including deep learning, network, and text analysis, which contribute to building expertise in Artificial Intelligence. This unique curriculum combines theoretical learning with real-world problem-solving defined by industry experts. Each student is assigned a scientific advisor, and the final semester is dedicated to M.Sc. thesis preparation. The program also offers the opportunity for students to spend a semester studying at a cooperating European university as part of a student exchange program. The Data Science team consists of researchers with major international collaborations, actively contributing to the global research community.

After completing the M.Sc. program, I aspire to advance to leadership roles such as Chief Data Officer or Head of Analytics, driving data strategy and innovation within forward-thinking organizations. I aim to lead teams and develop cutting-edge, data-driven solutions that transform industries, improve decision-making, and create significant global impacts.

I humbly request the admissions committee of your prestigious institution to consider my application.

Thank you and regards,
Rahul Kumar