Arshdeep Bamrah, P.Eng

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Summary

Experienced Data Scientist and Engineer with a total of 5+ years in quantitative roles. Skilled in navigating ambiguous environments, defining metrics, and communicating effectively. Proficient in Python and SQL, with expertise in IIOT, NLP and Generative AI.

Education

University of Toronto, School of Graduate Studies, Toronto, ON
M.Eng, Data Science and Machine Learning, June 2022
Cumulative GPA of 3.7/4.0

Ryerson University, Faculty of Engineering & Architectural Science, Toronto, ON
B.Eng, Mechanical/Mechatronic Engineering, June 2016

Professional Experience

Data Scientist | Apotex Inc., Toronto, ON, May 2021 – Present

- Defined, implemented, and operationalized new features and product-level metrics from scratch to measure the impact of product changes and track performance on machines using SQL and Python.
- Innovated the investigation process by developing NLP models, enabling Reliability Engineers to perform data analytics more efficiently.
- Implemented MS Azure Industrial IOT framework to transition the maintenance department towards predictive maintenance, enabling asset monitoring, anomaly detection, and forecasting.
- Developed visualization dashboards to display machine health, downtime predictions, and repair frequencies of components using Machine Learning Algorithm (Time Series Analysis).
- Presented results to the team's global head, wrote requested executive summaries detailing value propositions, and presented strategies to senior leadership and end clients.
- Developed and conducted A/B testing on NLP and Predictive Maintenance models UI to enhance user experience and model performance.

Project Engineer | Carmeuse – STT., Milton, ON, April 2017 – Sept 2020

- Utilized extensive practical experience in machine design, infrastructure design, process design, and structural mechanics to create mechanical layouts for bulk chemical plants using Solidworks and AutoCAD. Worked with Municipal Codes and Specifications to develop or improve operations at Wastewater Treatment plants, and innovated existing equipment based on new research. Liaised with project managers, expeditors, and purchasers to acquire resources and move projects forward.

Technical Skills

- NLP, large language models, or Generative AI
- Programming Languages: Python, SQL, Ruby, Java, JavaScript, HTML/CSS
- Data Science & Machine Learning: A/B testing, ETL, Data pipeline (cleansing, wrangling, visualization, modeling, interpretation), Statistics, Time series analysis, Git/DevOps, Big Data, Spark, TensorFlow, PyTorch

Projects

Chatbot for Portfolio Optimization, June 2022

- Created a chatbot using IBM Watson and Python, that optimizes user portfolio by applying computational financial strategies such as Minimum Variance, Monte Carlo Simulations, and Sharpe Ratio Optimization, to increase returns by 7+%.

Image Captioning and Generation, Dec 2021

- Created a model using Pytorch, Neural Networks and Transformers to generate captions of images, later used GAN to generate images from captions using Style GANs.