Arshdeep Bamrah, P.Eng

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EDUCATION AND HONORS

University of Toronto, School of Graduate Studies — Toronto, ON
Masters in Engineering, Data Science Emphasis — Expecting April 2022
- Cumulative GPA: 3.7/4.0
- Relevant Coursework: Machine Learning Applied/Finance, Data Science Statistics, Big Data Analytics, Probabilities

Ryerson University, Faculty of Engineering & Architectural Science — Toronto, ON
Honors Bachelor of Engineering with Distinction — May 2016
- Cumulative GPA: 3.6/4.0
- Professional Engineering and Queen Elizabeth Scholarship for high academic achievements (total $10,000 awarded)

PROFESSIONAL EXPERIENCE

Apotex Inc. — Toronto, ON
Data Scientist, Production Technical Division — May 2021 – Present
- Developed a data science framework to lead reliability initiatives for production machines and services.
- Utilized Python to implement unsupervised and supervised machine learning techniques for time series anomaly detection on 1TB of unstructured data, which reduced downtime by 20%.
- Developed 5 visualizations dashboards showing machine health, asset downtime predictions and repair frequencies of components.
- Presented results to team's global head and wrote requested executive summary detailing value proposition and strategy to present to end clients and senior leadership.

Carmeuse – STT. — Milton, ON
Project Engineer, Engineering Operations — April 2017 – Sept 2020
- Utilized extensive practical experience in machine design, infrastructure design, process design, and structural mechanics to create the mechanical layout of process bulk chemical plants using Solidworks and AutoCAD.
- Worked with Municipal Codes, and Specification to develop or improve the operation at Wastewater Treatment plants.
- Modified and upgraded existing products and equipment based on the new research, improved the design of a VertiMill to increase efficiency by 20%, improved the design of a wetting bowl to increase slaking effectiveness by 10%.
- Liaised with project managers, expeditors, and purchasers to acquire resources to move projects forward.

SKILLS

- **Programming Languages:** Python, SQL, SAS, Scala, Java, C, C++, HTML, Solidity
- **Big Data & Machine Learning**: Spark, Hadoop, Python, TensorFlow, PyTorch (eg. scikit-learn, numpy, pandas, matplotlib)
- **Data Science & Miscellaneous Technologies:** A/B testing, ETL, Blockchain, Data science pipeline (cleansing, wrangling, visualization, modeling, interpretation), Statistics, Time series, Experimental design, Hypothesis testing, APIs, Excel, Git

PROJECTS AND LEADERSHIP

Project Team Lead — Toronto, ON
Portfolio Optimization (University of Toronto) — Jan 2022 - Present
- Led a team of 4 students to create a tool (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 10+%.

Image Captioning (University of Toronto) — Sept 2021 – Dec 2021
- Led team of 3 students to create a tool leveraging Pytorch, Neural Networks, GANS to generate captions of an image and do object classifications with bleu score (2gram score of 0.65) comparable to state of the art NLP/NLG models.

Cofounder & Technical Lead — Toronto, ON
Invision Design — Sept 2020 – May 2021
- Cofounded a construction company to provide design and construction services to residential clients and generated average monthly revenue of $40,000.
- Led a team of 5 construction workers to do mechanical, plumbing, and renovation work in Toronto neighborhoods.

Teaching Assistant — Toronto, ON
Faculty of Engineering (Ryerson University) — Jan 2016 – April 2016
- Led 3rd-year mechanical engineering Machine Design course tutorial session to a group of 20+ students.