York University

Job Posting — Confidential, Professional & Managerial Employees (CPM)

Job Title: Senior Data Scientist	**Salary Grade:** F
Faculty / Dept.: OIPA	**Job Code:** 956507

Job Overview

The Office of Institutional Planning and Analysis (OIPA) supports the University to better enable informed decision making by providing effective planning, expert analysis, research, and guided access and interpretation to high-quality institutional data. The Office leads and supports Data and Analytics Strategy, Data Governance, Integrated Resource Planning, Institutional Reporting and Analysis, and Strategic Intelligence and Predictive Analytics.

Reporting to the Director, Strategic Intelligence and Predictive Analytics and with occasional direction from the AVP Institutional Planning and Chief Data Officer, the Senior Data Scientist role applies a combination of techniques from statistics, machine learning / artificial intelligence, computer science and data visualization to produce advanced predictive analytic solutions, based on patterns and relationships in large volumes of data. These predictive analytic solutions address the full student lifecycle – from recruitment through graduation and beyond – and enables student success through supporting the design and delivery of exceptional experiences and services that meet the learning needs of York University students, undertaken by academic units and student support services across the University, including identification of opportunities for new programs and services.

This role also undertakes advanced predictive modeling to support innovations in enrolment forecasting and planning functions and academic resourcing activities. The role produces predictive analytic solutions to enable impact evaluation of programs and initiatives, continuous improvement of institutional strategies, and evidence-based decision making.

Under direction from the AVP Institutional Planning and Chief Data Officer, this role undertakes analyses of institutional data in support of Faculty Relations and Labour Relations, including analyses that may impact the outcome of labour negotiations.

Key Responsibilities

- Researches, designs, and implements advanced predictive analytic solutions through effective use of statistics, machine learning / artificial intelligence, computer science and data visualization.
- Designs and implements solutions for sophisticated detection and categorization of evolving and emerging trends, key drivers, potential disruptors and discontinuities, and identification of early signals of change.

- Manages the designs and implementation of data science solutions that identify drivers of student choice and satisfaction, and dimensions of students' perceptions of quality and price relative to their University experience. Informs recruitment strategies and assists with structuring scholarship and financial aid packages through data and predicts perceptions and dimensions of value and 'fit' for specific Faculties and programs.
- Manages data that informs the early detection of student success by identifying and quantifying various academic risks for individual students, such as risk of not continuing with studies, and predicting factors that are associated with students' attrition/retention and with students' successes.
- Provides data science solutions for personalized and timely feedback to students on their learning. Designs and implements data science solutions that help students understand their options for continuing their academic journey and meet their academic goals, such as degree completion.
- Evaluates the impact of strategic enrollment management strategies in and out of the classroom through application of Artificial Intelligence, machine learning, and econometrics. Supports the continuous improvement of related initiatives and synthesizes evaluation results across numerous initiatives.
- Collaborates with other team members within the Office of Institutional Planning and Analysis on applications of advanced predictive analytics to enhance enrolment projection modeling, particularly in the context of long-range planning and planning under heightened uncertainty.
- Identifies new opportunities to apply advanced predictive analytics to individual student behavior, improve strategic enrolment planning and management, and enhance data-driven decision-making for senior leaders and management.
- Collaborate with key university partners involved in applied data science, predictive analytics, strategic enrolment management and innovation in teaching and learning to support informed decision making by senior leaders. Represents the University and OIPA on pan University committees or groups tied to strategic enrolment planning and management, and teaching and learning.
- Leads various data analytic projects and initiatives across the University. Identifies and recommends the use of predictive analytics to support the University community with various priority initiatives.
- In conjunction with the Director, prepares drafts/reports, papers, and presentations to support the Provost's Team, the Vice President Finance and Administration and other Senior Administrators in many University-wide committees, such as Senate and Board of Governors and their various Committees.
- Designs and conducts analyses, reports, and presentations for other projects.

- Under direction from the Institutional Planning and Chief Data Officer, undertakes analyses of institutional data in support of Faculty Relations and Labour Relations, including analyses that may impact the outcome of labour negotiations.
- Makes recommendations that inform and influence senior leaders on decisions and initiatives in support of the University's broader strategic planning processes.

Required Qualifications

Minimum Education, Training & Credentials

- Bachelor's degree in a relevant discipline.
- Master's degree in a relevant discipline.

Minimum Experience

- 5 years of related experience working with advanced predictive analytics and data science.
- Experience using Python, R, and Azure cloud platform or similar cloud platform, to develop and deliver data science solutions.
- Experience using Git, Subversion, or similar version control systems.

Knowledge

- Knowledge of approaches, techniques, algorithms, and tools in data science, machine learning / artificial intelligence, econometrics and statistics.
- Understanding of ethical uses of data and data science.
- Knowledge of the uses of predictive analytics in a post secondary institution.

Skills

- Ability to create real-world solutions through advanced predictive analytics and evidence-based decision making.
- Effective data visualization skills and information design skills.
- Effective with the use of data science collaboration standards, practices, and tools.
- Senior statistical programmer/analyst skills, such as analysis, coding and modelling.
- Effective communications skills to convey technical information in a straightforward and non-technical manner.
- Effective planning and project management skills.
- Critical thinking, and analytical skills.
- Able to build effective working relationships with various levels of leadership and diverse groups.

Summary of Work Environment

- Normal office work environment.