CLASS TITLE: DATA SCIENTIST

CHARACTERISTICS OF THE CLASS

Under general supervision, positions allocated to this class perform specialized data engineering and analysis functions to develop data driven solutions for the use of informed, actionable, strategic decisions, and performs related duties as required

ESSENTIAL DUTIES

- Develops standardized data processing systems for data sets and platforms including transformation, coding, linking, de-duplicating and combining additional data sets for enrichment to drive solutions

- Develops strategy, application programming interface (API) access and outputs for new departmental projects and programs

- Assists in coordinating access to existing systems, ensuring security and data integrity

- Processes sensor data and develops advanced modeling relationships within populations and their environmental exposures

- Leverages data to inform decision making by utilizing spatial data, data mining, artificial intelligence, and machine learning techniques

- Develops data driven solutions to improve decision making while effectively communicating findings, interpreting complex data and guiding operating departments

- Develops and implements data-driven statistical models to address departmental needs

- Extracts information from structured, semi-structured, and unstructured data using statistical methods and algorithms that find patterns and relationships in large volumes of data

- Finds anomalies, patterns, and correlations within large data sets to predict outcomes using a broad set of techniques

- Compares and selects model to predict outcome of interest

- Prepares graphic and spatial presentations of data (e.g., charts, graphs, matrices, and maps), presenting information with organized facts and statistics to provide insight

- Coordinates and communicates across teams to understand their processes and determines project feasibility, deliverables, scope, timeline, reporting, and impact

- Documents analysis approach, methods, and code to allow projects to be transferred and automated

- Measures and determines opportunities of current modeling algorithm for continuous improvement

- Stay abreast of current events and activities and participates in seminars, webinars and other activities for professional development purposes

- Represents the department at various meetings and conferences and assists with special analytics projects as requested

NOTE: *The list of essential duties is not intended to be inclusive; there may be other duties that are essential to particular positions within the class.*

MINIMUM QUALIFICATIONS

Education, Training, and Experience

- Graduation from an accredited college or university with a Bachelor's degree in Data Analytics, Statistics, Mathematics, Economics, Computer Science, or Information Technology/Systems or a directly related field, plus three (3) years of experience in data analysis or data management; or an equivalent combination of education, training, and experience

Licensure, Certification, or Other Qualifications

- None

WORKING CONDITIONS

- General office environment

EQUIPMENT

- Standard office equipment (e.g., telephone, printer, photocopier, fax machine, calculator)
- Computers and peripheral equipment (e.g., personal computer, computer terminals, hand-held computer, scanner)

PHYSICAL REQUIREMENTS

- No specific requirements

KNOWLEDGE, SKILLS, ABILITIES, AND OTHER WORK REQUIREMENTS

Knowledge

Comprehensive knowledge of:

- applicable computer software packages
- *software and tools such as Python, SPSS, SAS, R, or other similar statistical tools
- *ad-hoc query tools such as Structured Query Language (SQL) and reporting platforms
- *methods and techniques of analysis and design
- *data mining processes and tools
- principles and techniques of inductive and deductive reasoning
- research and reporting methods, tools and techniques
- analytical techniques used in the development and dissemination of actionable information
- *methods, practices, and procedures for analyzing and resolving computer-related problems
- Microsoft Office application suite, including Excel, PowerPoint, Word

Knowledge of applicable City and department policies, procedures, rules, and regulations

Skills

- *ANALYTICAL THINKING – Analyze information and using logic to address work or job issues and problems
- *ACTIVE LEARNING – Understand the implications of new information for both current and future problem-solving and decision-making

- *ACTIVE LISTENING - Give full attention to what other people are saying, take time to understand the points being made, ask questions as appropriate, and not interrupt at inappropriate times

- CRITICAL THINKING - Use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems

- *COMPLEX PROBLEM SOLVING – Identify complex problems and review related information to develop and evaluate options and implement solutions

- *JUDGMENT AND DECISION MAKING – Consider the relative costs and benefits of potential actions to choose the most appropriate one

- PROGRAMMING – Write computer programs for various purposes

- QUALITY CONTROL ANALYSIS – Conduct tests and inspections of products, services, or processes to evaluate quality or performance

- *TECHNOLOGY DESIGN – Generate or adapt equipment and technology to serve user needs

Abilities

- COMPREHEND ORAL INFORMATION – Listen to and understand information and ideas presented through spoken words and sentences

- SPEAK – Communicate information and ideas in speaking so others will understand

- WRITE – Communicate information and ideas in writing so others will understand

- COMPREHEND WRITTEN INFORMATION – Read and understand information and ideas presented in writing

- RECOGNIZE PROBLEMS – Tell when something is wrong or is likely to go wrong

- REASON MATHEMATICALLY – Choose the right mathematical methods or formulas to solve a problem

- IDENTIFY PATTERNS – Identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material

Other Work Requirements

- ADAPTABILITY – Able to adapt to different environments and roles while remaining alert and ready to take intelligent action in the event of a security crisis or situation

- DEPENDABILITY – Demonstrate reliability, responsibility, and dependability and fulfill obligations

- ATTENTION TO DETAIL – Pay careful attention to detail and thoroughness in completing work tasks

- INITIATIVE – Demonstrate willingness to take on job challenges

All employees of the City of Chicago must demonstrate commitment to and compliance with applicable state and federal laws, and City ordinances and rules; the City's Ethics standards, and other City policies and procedures.

The City of Chicago will consider equivalent foreign degrees, accreditations, and credentials in evaluating qualifications.

* May be required at entry.

City of Chicago
Department of Human Resources
April, 2021