

**CLASS SPECIFICATION**

04/24/2025

DATA SCIENTIST, 1 4 6 9

Summary of Duties: A Data Scientist applies advanced analytical and proficient coding skills, data engineering skills, statistical modeling, machine learning (ML), and artificial intelligence (AI) to support strategic decision-making and improve processes within the Los Angeles Department of Water and Power (LADWP). This classification works with large, diverse, and complex data sets, including sensor readings, weather feeds and grid equipment logs, in order to assemble and integrate them into a standardized platform using state-of-the-practice ELT (Extract, Load, Transform) tools and technologies to develop predictive and prescriptive models that enhance system reliability, efficiency, and sustainability. Data Scientists create data pipelines used by other data scientists, analysts, data-centric applications, and other data consumers with a focus on system optimization.

Class Characteristics: A Data Scientist serves as a departmental resource providing proficient statistical modeling and programming skills to extract meaning from complex business or scientific data, creating and supporting data structures and practices that maintain data accessibility and readiness for analysis while ensuring consistency, and adherence to best data management practices and governance standards. An employee in this classification is distinguished from general data analysis roles by its specialized focus on designing, implementing, and managing data-driven solutions and system applications, including predictive maintenance and load forecasting. Unlike traditional business intelligence roles, this classification may require expertise in power grid operations, energy data analytics and real-time decision support systems. Data Scientists leverage data to derive insights and depend on high-quality data for accurate analysis and modeling.

Example of Duties:

- Identifies relationships and trends, tests hypotheses, and develops data-driven improvements to existing processes through the application of statistics, machine learning (ML), and artificial intelligence (AI);
- Conducts system development and consulting for data analytics solutions;
- Communicates with stakeholders (data analysts, accountants, engineers, researchers) to understand challenges and requirements and documents analytical processes for transparency and compliance;
- Profiles, validates, and cleans data for analysis;
- Manages ELT and CI/CD (continuous integration/continuous delivery) pipelines to ensure the data curation process meets both immediate and future data analytics requirements;

- Identifies data sources, determines potential gaps, and obtains data from Systems of Record (SOR) for establishing batch or real-time data feeds to enable analysis and for ongoing use across the Department;
- Develops dataset processes utilizing a variety of languages and tools, such as scripting languages, for integration of data models, mining, and production;
- Creates highly scalable data management interfaces and software components using programming languages and tools;
- Integrates data management technologies and software engineering tools into existing systems;
- Implements cloud-based AI/ML using platforms like Azure, Google cloud or AWS (Amazon Web Services);
- Collects and cleans diverse power system datasets, including Internet of Things (IoT) (physical environment data collection) sensor data logs, Supervisory Control and Data Acquisition (SCADA), marketing pricing feeds and historical demands records;
- Improves data reliability, efficiency, and quality through recommendations and data use-case solutions;
- Ensures systems meet Department requirements and industry standards;
- Converts data models into scalable analytical solutions in collaboration with data science and analytics teams;
- Automates processes to turn data into reporting, through coding and containerization;
- Supports and collaborates with other data professionals (developers, architects, analysts, scientists) to ensure optimal data delivery architecture and data-driven applications are production-ready and adopted by the Department;
- Designs, develops, and deploys data pipelines to ensure high-quality, structured datasets for analysis and machine learning applications;
- Designs and maintains machine learning models to optimize business operations;
- Builds and refines machine learning and deep learning models to support predictive maintenance, demand forecasting, and grid optimization;
- Conducts rigorous testing and validation of models using advanced statistical and AI-driven techniques to ensure robustness and adaptability to evolving conditions;
- Deploys machine learning models and integrates AI models into production environments in collaboration with software engineers and IT (Information Technology) teams;
- Develops algorithms for real-time power system monitoring and anomaly detection;
- Translates complex data insights into clear, actionable recommendations for utility operators, engineers and decision makers;
- Presents findings in structured format using visualization tools and reports to enhance understanding and adoption of data-driven strategies;
- Supports regulatory compliance efforts by providing data-driven analysis for reporting and policy recommendations;
- Ensures Data security, privacy, and compliance with IT policies;

REQUIREMENTS:

1. Graduation from an accredited four-year college or university with a Bachelor's degree in Data Science, Data Analytics, Computer Science, Data Engineering, Statistics, Applied Mathematics, or related field; **and**
2. Two years of full-time paid experience in data analytics or machine learning model or programming.

Persons with disabilities may be able to perform the essential duties of this classification with reasonable accommodation. Such accommodation will be evaluated on a case by case basis and depend, in part, on the specific requirements for the job, the limitations related to the disability, and the ability of the hiring department to reasonably accommodate the limitations.

As provided in Civil Service Commission Rule 2.5 and Section 4.55 of the Administrative Code, this specification is descriptive, explanatory and not restrictive. It is not intended to declare what the duties and responsibilities of any position shall be.