

UW HEALTH JOB DESCRIPTION

Data Scientist Principal

Job Code: 330094	FLSA Status: Exempt	Mgt. Approval: J. Long	Date: July 2021
Department: Enterprise Analytics		HR Approval: N. Lazaro	Date: July 2021

JOB SUMMARY

The Data Scientist Principal is constantly pushing the boundary of how healthcare's most important questions and problems can be answered using data. The Data Scientist starts with large data sets and varied types of structured and unstructured data and apply a range of techniques including statistical, machine learning, and natural language processing, to discover, explore, and uncover, patterns and insights and distill them into readily consumable formats and visualizations. The Data Scientist Principal is responsible for turning data into actionable, data-driven insights that enhance the delivery of clinical care and clinical decision-making.

The Data Scientist Principal works closely with other roles including machine learning engineers, front-line clinicians, stakeholders, informaticists, and researchers, while employing a robust knowledge of healthcare, to deliver the right solution. The Data Scientist Principal is the scientist who performs experiments and conduct learning to identify the best algorithms and solutions. The Data Scientist Principal has a bias towards actionable insights in the name of "getting data science into the system".

The Data Scientist Principal is conscious of advancing the data science maturity of UW Health and defining and showing how data science supports the organization's overall mission and vision.

The Data Scientist Principal is a technical leader within UW Health IS and across the UW Health system. The Data Scientist Principal is accountable for key domains within the overall data science architecture at UW Health and leads initiatives that execute the technical architecture and roadmap for data science.

MAJOR RESPONSIBILITIES

Solution Development and Delivery:

Use data to answer questions and solve problems; uncover insights and patterns in complex data, using complex data and new types of data and methods.

Develop predictive and statistical models, insights, patterns, visualizations, that can be used to improve decision making in and improve clinical operations with the focus of creating actionable insights to "get data science into the system". Plans and executes original data science solutions in a problem space that is unique and critical to the company.

Process and Standards

Develop and improve technical standards while reducing unnecessary technical complexity.

People:

Deliver and communicate data science solutions, findings, and statistical concepts, to senior leaders and stakeholders.

Assist planning and execution of initiatives that advance data science architecture per the roadmap; responsible for the success of specific domain(s) or solution(s) within the overall architecture and roadmap as defined by architects or other leaders.

Act as a department role model for data science. Mentor and develop other data scientists.

Technical Leadership:

Plan and lead cross-functional teams to execute key, large-scale deliverables according to technical roadmap, priorities, and architecture.

ALL DUTIES AND REQUIREMENTS MUST BE PERFORMED CONSISTENT WITH THE UW HEALTH PERFORMANCE STANDARDS.

JOB REQUIREMENTS

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Education	Minimum	Master's degree in Computer Science, Statistics, Data Science, or relevant quantitative Engineering fields (Six (6) years of combined education (e.g. Bachelor's degree) and work experience may be considered in lieu of Master's degree)
	Preferred	Doctorate degree in Computer Science, Statistics, Data Science, or relevant Engineering fields
Work Experience	Minimum	None
	Preferred	<ul style="list-style-type: none"> • 1 year of experience in a technical leadership role • 5 years of data science or machine learning engineering experience including delivery high-quality data science to stakeholders or deploying machine learning solutions into production 5 years of experience with data and statistical analysis preferably with large data sets or unstructured data (free text, images, machine or IoT) • 3 years of experience in healthcare (provider or payer)
Licenses & Certifications	Minimum	None
	Preferred	<ul style="list-style-type: none"> • Epic certifications in Cogito • Epic badge or certification in Cognitive Computing Platform
Required Skills, Knowledge, and Abilities		<p>Advanced proficiency in at least one of the following and at least intermediate proficiency in all four of the following:</p> <p><u>1. Working with "big data" including large volumes of data, unstructured data, streaming data, data veracity:</u></p> <ul style="list-style-type: none"> • Skilled at working with unstructured data such as text, streaming, or machine data, and working with "big" data technologies like Apache Spark • Solid understanding of data structures, data modeling, dimensional modeling • Skilled in creating visualizations of data such as ggplot, matplotlib <p><u>2. Coding techniques, best practices, and mindset, for data science:</u></p> <ul style="list-style-type: none"> • Skilled at writing robust code in Python, R, Spark, SQL including notebook-based workflows (Jupyter, R, Spark) and creation of reusable code packages and libraries, and at version control (GitHub) • Skilled at testing code including techniques best practices used in software testing <p><u>3. Statistics theory and techniques used in data science:</u></p> <ul style="list-style-type: none"> • Strong knowledge of math, probability, statistics, and algorithms, such as linear algebra, Bayesian statistics • Skilled in using statistical methods (such as boosting, generalized linear models/regression, random forests, social network analysis) and in using machine learning techniques (such as artificial neural networks, clustering, and decision tree learning) <p><u>4. Healthcare subject matter expertise:</u> Subject matter expertise in one or more areas such as clinical informatics or biomedical informatics, hospital operations, ambulatory operations, population health management, performance measure development, healthcare administration, patient satisfaction, strategic planning, labor and productivity analytics, financial modeling, cost accounting, revenue cycle management, or survey design/development</p> <p><u>Solution Development and Delivery:</u> Outstanding analytical and problem-solving abilities Identifies and leverages the most appropriate and best statistical methods, data science techniques, or technological capabilities, to solve the problem, which may include developing original and innovative approaches or adopting approaches that are new for the organization.</p> <p><u>Process and Standards</u> Ability to synthesize ambiguous and inconsistent feedback and input. Ability to drive deliverables and priorities. Defines technical specifications and requirements. Proactively identifies risks before work occurs. Ability to break down technical problems to root cause and first principles. Ability to reduce complexity and define elegant solutions and guiding principles.</p>

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	<p><u>People</u> Ability to proactively engage others at all levels of the organization Ability to lead a team Ability to work in agile, iterative frameworks and coach others on agile mindset.</p> <p><u>Communication, Mentoring, and Teaching:</u></p> <ul style="list-style-type: none"> • Intermediate proficiency with written and verbal communication skills • Intermediate proficiency with mentoring and teaching others on machine learning concepts, techniques, and mindset <p><u>Technical Leadership:</u> Advanced proficiency in leadership including technical leadership. Competency includes:</p> <ul style="list-style-type: none"> • Leads with integrity. Maintains strategic orientation. Demonstrates business and financial acumen. Champions innovation. Manages execution. Leads and develops people. • Advanced proficiency with technical leadership: Sound technical judgment including decision-making amidst ambiguity, trade-offs, and constraints. Fluency at multiple levels in the technical stack. Balances long-term technical vision against short-term deliverables. Promotes elegant design and reduces unnecessary technical complexity. Works backwards and drives towards meaningful requirements. Staying current with a solid technical understanding of technology trends.
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PHYSICAL REQUIREMENTS

Indicate the appropriate physical requirements of this job in the course of a shift. *Note: reasonable accommodations may be made available for individuals with disabilities to perform the essential functions of this position.*

	Physical Demand Level	Occasional Up to 33% of the time	Frequent 34%-66% of the time	Constant 67%-100% of the time
X	Sedentary: Ability to lift up to 10 pounds maximum and occasionally lifting and/or carrying such articles as docket, ledgers and small tools. Although a sedentary job is defined as one, which involves sitting, a certain amount of walking and standing is often necessary in carrying out job duties. Jobs are sedentary if walking and standing are required only occasionally and other sedentary criteria are met.	Up to 10#	Negligible	Negligible
	Light: Ability to lift up to 10 pounds maximum and occasionally lifting and/or carrying such articles as docket, ledgers and small tools. Although a sedentary job is defined as one, which involves sitting, a certain amount of walking and standing is often necessary in carrying out job duties. Jobs are sedentary if walking and standing are required only occasionally and other sedentary criteria are met.	Up to 20#	Up to 10# or requires significant walking or standing, or requires pushing/pulling of arm/leg controls	Negligible or constant push/pull of items of negligible weight
	Medium: Ability to lift up to 50 pounds maximum with frequent lifting and/or carrying objects weighing up to 25 pounds.	20-50#	10-25#	Negligible-10#
	Heavy: Ability to lift up to 100 pounds maximum with frequent lifting and/or carrying objects weighing up to 50 pounds.	50-100#	25-50#	10-20#
	Very Heavy: Ability to lift over 100 pounds with frequent lifting and/or carrying objects weighing over 50 pounds.	Over 100#	Over 50#	Over 20#
List any other physical requirements or bona fide occupational qualifications:				