UW HEALTH JOB DESCRIPTION

Machine Learning Engineer I

Job Code: 330095	FLSA Status: Exempt	Mgt. Approval: J. Long	Date: July 2021
Department: Enterprise Analytics		HR Approval: N. Lazaro	Date: July 2021

JOB SUMMARY

The Machine Learning Engineer I sits at the intersection of software engineering and data science. The Machine Learning Engineer I leverages big data tools and software engineering to turn healthcare data into data science solutions that provide actionable insights to improve clinical care. The Machine Learning Engineer I is responsible for taking data science solutions and scaling them out to production-level models that can handle real-time data with rigorous operating standards in support of healthcare delivery.

The Machine Learning Engineer I works closely with cross-functional roles such as data scientists, IT teams, front-line clinicians, stakeholders, informaticists, and researchers, to build or enhance robust systems with embedded artificial intelligence and data science. The Machine Learning Engineer I has a bias towards actionable insights in the name of "getting data science into the system".

The Machine Learning Engineer I 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.

Machine Learning Engineer I is a valued contributor within machine learning and data science teams in UW Health IS. The Machine Learning Engineer I performs prescriptive work in a high-quality fashion while building machine learning engineering competencies.

MAJOR RESPONSIBILITIES

Machine Learning Development and Deployment Design and build software that uses machine learning solutions to improve clinical care, with a focus of deploying actionable, embedded solutions at the point of care or the point of decision making, "get data science into the system".

Write production-level code consistent with software engineering principles, methodologies, and best practices; includes version controls, code reviews, software design, evaluation, and software testing. Performs prescriptive work in writing production-level, high-quality code.

Process and Standards
Improves team-level processes.

People:
Work on a cross-functional team to design and deploy solutions in production software and systems using agile principles and agile scrum methodologies.

Technical:
Develop increasing competency with machine learning engineering, software engineering, and data engineering. Successfully completes ongoing technical training.

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

JOB REQUIREMENTS

Education	Minimum	Bachelor's Degree in Computer Science, Mathematics, Software Engineering, Computer Engineering, or related fields (Four (4) years relevant work experience may be considered in lieu of Bachelor's degree)
	Preferred	
	Minimum	None

Work Experience	Preferred	• One (1) year of experience in software engineering including software design, development, testing, release
Licenses & Certifications	Minimum	None
	Preferred	• Epic certifications in Cogito • Epic badge in Cognitive Computing Platform • Agile Scrum Certifications • Azure Certifications • Other related certifications such as Google certification for Machine Learning Engineer

Required Skills, Knowledge, and Abilities		Emerging proficiency in all three of the following:
		
		1. Machine learning engineering including ML development and operations. Competency includes:
		    • Skilled at MLOps including machine learning best practices, design patterns, model management, and machine learning frameworks (like Tensorflow, Keras, or PyTorch) and libraries (like scikit-learn, Theano)
		    • Strong knowledge of machine learning concepts such as learning procedures, bias and variance tradeoff and math, probability, statistics, linear algebra.
		    • Strong knowledge of public cloud technologies, services, and providers, including Microsoft Azure
		    • Skilled at DevOps principles and practices, such as automation and orchestration with CI/CD or IaC, and at using IT frameworks like ITSM
		
		2. Software engineering with an emphasis in machine learning applications. Competency includes:
		    • Skilled at writing robust code in Python, R, Java, Scala, C++, including debugging and version control technologies
		    • Strong knowledge of computer science fundamentals (including data structures and algorithms), software and application development methodologies, and software architecture including API web services
		    • Skilled at software testing methodologies such as unit testing, functional testing, integration testing
		
		3. Data engineering with an emphasis in machine learning. Competency includes:
		    • Skilled at working with "big" data pipelines, including data ingestion, feature engineering, data validation; "big" data includes unstructured and streaming data
		    • Strong knowledge of data structures and data modeling
		
		Machine Learning Development and Deployment:
		Outstanding analytical, critical thinking, and problem-solving abilities
		Ability to write, test, deploy robust code as prescribed by the work
		
		Process and Standards
		Ability to receive prescriptive feedback
		
		People:
		Ability to engage in cross-functional interactions
		Ability to work in a team
		Ability to work in agile, iterative frameworks
		
		Communication, Mentoring, and Teaching:
		    • Skilled in written and verbal communication

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 dockets, 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 dockets, 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:				