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Machine Learning Lead Engineer

Department: Technology & Information Services

Organizational Relationship: Reports to the Manager of Machine Learning

FLSA Status: Exempt

Last Updated: January 2025

General Summary:

The Lead Engineer leads architecture, design and development of Machine Learning (ML) and Generative AI (Gen AI) applications tailored to optimize legal and business workflows. This individual will collaborate directly with the Manger of Machine Learning to lead and drive key AI/ML projects, ensuring alignment with organization goals and driving technical excellence across the team.

As a strategic leader, the Lead Engineer provides technical mentorship, sets an enforces best practices for AI/ML development, and ensures the delivery of high-quality, scalable solutions. They will take ownership of the end-to-end lifecycle of AI/ML applications, including translating R&D outcomes into production-ready solutions and overseeing operationalization. This role requires technical expertise in full-stack development and AI/ML, as well as the ability to lead technical teams.

This role works closely with stakeholders, leadership and engineering teams to align technical architecture and implementations with business objectives, fostering innovation and delivering impactful results.

Essential Duties and Responsibilities

"Essential duties" are those that an individual must be able to perform with or without reasonable accommodation.

1. Design and architect full-stack solutions for Machine Learning / GenAI workflows, integrating both frontend and backend components to deliver robust and scalable solutions

2. Act as a technical authority, bringing deep industry expertise to guide architectural decisions and implementation and ensure high-quality implementation of AI/ML solutions

3. Lead cross-functional initiatives by collaborating with Innovation Attorneys, stakeholders and engineering team to define technical requirements and deliver solutions that align with organizational goals and strategies

4. Provide technical leadership by mentoring team members, offering expert advice, and establishing engineering best practices

5. Works with and makes recommendations to the leadership regarding the maintenance and enhancement of existing Latham production applications

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6. Oversees the end-to-end lifecycle of AI/ML applications from conceptualization and design, through delivery and ongoing support

7. Stays informed on the latest industry trends and technologies to keep our AI systems at the forefront of technological advancements

8. Performs other related projects and assignments as required

Position Specifications

Education

- Master's degree in Information Systems, Computer Science, Engineering, Data Science or related field preferred

Work Experience

- A minimum of seven years' industry experience in software development and Machine Learning
- A minimum of five years experience leading projects and architecting solutions in industry settings
- A minimum of five years' experience working with agile teams
- Experience building and productizing real-world AI models and systems

Knowledge, Skills, and Abilities

- Experience designing and implementing various architectural patterns, including microservices, serverless and monolithic architectures
- Proficiency in modern web development frameworks and languages, including React, Typescript, and Node.js with experience building and maintaining front-end and backend-applications
- Familiarity with alternative web frameworks such as Vue.js and a strong understanding of component-based architecture, state management and responsive design principles
- Expertise in Python for back-end development, Machine Learning / GenAI workflows and API development
- Experience with libraries and frameworks commonly used for Gen AI application development (e.g., LangChain, LangGraph, Haystack, Guardrails, etc.)
- Proficiency with API development frameworks (e.g., Django, Flask, FastAPI) and knowledge of web standards relating to API development (e.g., CORS, OpenAPI)
- Experience working with production-grade vector databases (e.g., pgvector, Pinecone, or Milvus) for efficient storage and retrieval of embeddings
- Experience with relational (e.g., MySQL, PostgreSQL) and NoSQL databases (e.g., Mongo), with experience designing schemas for Gen AI workflows
- Solid understanding of modern software development practices including CI/CD/CT, Test-Driven Development, and version control (Git)
- Proficiency with Agile development
- Proficiency with container technologies (Docker, Kubernetes)
- Familiarity with Cloud Services e.g., Azure (preferred), AWS, GCP
- The ability to understand technical problems as presented by non-technical users; the ability to communicate technical solutions in a non-technical manner

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- Well-developed and professional interpersonal skills; ability to interact effectively with people at all organizational levels of the firm
- Ability to work in a team environment with a customer service focus
- Strong communication skills, both written and verbal
- Organizational skills needed to manage time well, prioritize effectively, and handle multiple deadlines
- Ability to handle confidential and sensitive information with the appropriate discretion

Physical Demands

- Extensive time using a computer including use of a PC keyboard and mouse or similar data input devices is required.

Working Conditions

All Latham & Watkins positions are in a typical indoor office environment.

The statements contained in this position description are not necessarily all-inclusive; additional duties may be assigned and requirements may vary from time to time, and from location to location.

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