



Machine Learning Engineer Job Description

[Company Name] is seeking a highly skilled and innovative **Machine Learning Engineer** to design, develop, and deploy scalable machine learning and deep learning solutions that will drive our next generation of data-driven products. You will be responsible for transforming data science prototypes into production-ready systems, ensuring reliability, efficiency, and scalability in a fast-paced environment.

Key Responsibilities

- **ML System Design & Development:** Design, develop, and implement robust, scalable machine learning and deep learning systems and algorithms to solve complex business problems.
 - **Model Production & MLOps:** Take ownership of the end-to-end machine learning lifecycle, including deploying, monitoring, and maintaining models in production environments.
 - **Data and Feature Engineering:** Build and manage high-quality data pipelines for model training and inference. Perform extensive **data preprocessing** and **feature engineering** to optimize model performance.
 - **Model Optimization & Evaluation:** Run ML experiments, perform rigorous statistical analysis, tune hyperparameters, and optimize models for performance, scalability, and resource efficiency.
 - **Collaboration:** Work closely with data scientists to translate research prototypes into production code and collaborate with software/data engineers to integrate ML models into existing systems.
 - **Research & Innovation:** Stay current with the latest advancements in machine learning, deep learning, and AI/ML frameworks to introduce innovative solutions.
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Required Qualifications



Education & Experience

- Bachelor's or Master's degree in **Computer Science**, **Applied Mathematics**, **Statistics**, or a related quantitative field.
- Proven **[X] years** of experience as a Machine Learning Engineer, AI Engineer, or a similar role focused on building and deploying ML systems.



Technical Skills

- **Programming Mastery:** Expert proficiency in **Python** and its scientific computing stack (NumPy, Pandas, Scikit-learn). Experience with other relevant languages (e.g., Java, Scala, R) is a plus.
- **ML/DL Frameworks:** Deep practical experience with major machine learning frameworks such as **TensorFlow** and/or **PyTorch**.

- **Algorithms & Math:** Strong foundational knowledge of **statistical modeling, probability, linear algebra, calculus**, and a comprehensive understanding of various ML/DL algorithms (e.g., Regression, Classification, Clustering, CNNs, RNNs/Transformers).
- **Software Engineering:** Solid understanding of software development best practices, including version control (**Git**), software architecture, data structures, and algorithms.
- **Big Data & Cloud:** Experience with big data technologies (**Spark, Hadoop**) and proficiency in deploying ML solutions on a major cloud platform (**AWS, Azure, or Google Cloud**).
- **Databases:** Hands-on experience with SQL and NoSQL databases.

Soft Skills

- **Analytical & Problem-Solving:** Impeccable analytical skills with a creative and efficient approach to solving complex, ambiguous problems.
- **Communication:** Excellent verbal and written communication skills with the ability to clearly articulate complex technical concepts to both technical and non-technical stakeholders.

Preferred Qualifications

- Experience with **MLOps** platforms (**Kubeflow, MLflow, Sagemaker**) and containerization technologies (**Docker, Kubernetes**).
- Familiarity with **Natural Language Processing (NLP), Computer Vision, or Reinforcement Learning**.
- Active contributor to open-source ML projects or a strong portfolio of personal machine learning projects.