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MLOps Scaling Machine Learning Lifecycle in an Industrial Setting

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Abstract : Machine learning has evolved from an area of academic research to a real-word applied field. This change comes with challenges, gaps and differences exist between common practices in academic environments and the ones in production environments. Following continuous integration, development and delivery practices in software engineering, similar trends have happened in machine learning (ML) systems, called MLOps. In this paper we propose a framework that helps to streamline and introduce best practices that facilitate the ML lifecycle in an industrial setting. This framework can be used as a template that can be customized to implement various machine learning experiment. The proposed framework is modular and can be recomposed to be adapted to various use cases (e.g. data versioning, remote training on cloud). The framework inherits practices from DevOps and introduces other practices that are unique to the machine learning system (e.g.data versioning). Our MLOps practices automate the entire machine learning lifecycle, bridge the gap between development and operation.

Keywords : cloud computing, continuous development, data versioning, DevOps, industrial setting, MLOps
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