MLSys: The New Frontier of Machine Learning Systems – Summary

This paper mainly proposes fostering new systems machine learning research community, focusing on topics such as hardware systems for ML, software systems for ML and ML optimized for metrics, as machine learning techniques are constantly adopting but implementing them seems difficult due to the differences in development and deployment of these new techniques. In order to deal with these challenges, the authors introduce a new systems machine learning community, which targets research at the intersection of systems and machine learning techniques to improve traditional computing systems.   The paper encourages research questions in three main areas: software systems design, hardware systems design and addressing metrics beyond predictive accuracy. This idea can even be used for large scale and broader questions on topics like effect of ML systems on societies, maintaining privacy and social, economic legal issues, etc. The paper also discusses major pain points that are full stack issues which has caused bottlenecks to surface. They are: deployment, cost and accessibility concerns. Solution to these pain points is a critical to bridge the gap between machine learning's potential and real-world utility. The MLSys have experts from both ML and Systems who review the processes rigorously. To expedite the process, artificial evaluation processes are also embraced. In conclusion, the paper represents an overview of the challenges and opportunities to bridge difficulties in implementing machine learning techniques by establishing MLSys as an interdisciplinary between traditional ML and system communities.

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