

In today's technology-driven world, Machine Learning (ML) is a game-changer revolutionizing how software works. ML-enabled systems use a variety of assets, including ML models, which can make them challenging to manage during and after development. To effectively handle these dynamic asset types, standard software tools need to be better equipped.

Our mission? Bridge the ML-software gap with better tools. We embarked on a journey of exploration, dissecting the world of ML experiments, understanding the challenges of managing assets, and surveying the landscape of existing ML Experiment Management Tools (ExMTs). Our findings have led us to significant insights.

We unveiled the hurdles in ML experiment management, paving the way for improvement. We dissected ML projects, shedding light on development. We surveyed existing tools, revealing the state of practice. We scrutinized ExMTs, recognizing their potential to boost user performance.

Our guide presents a prototype and blueprint for a unified ExMT, integrating tools for software engineering and data science towards improved software and ML asset management.

This thesis highlights the significance of ML asset management in ML-enabled software. Our research-backed groundwork aims to improve ExMTs and redefine ML's role in software systems.



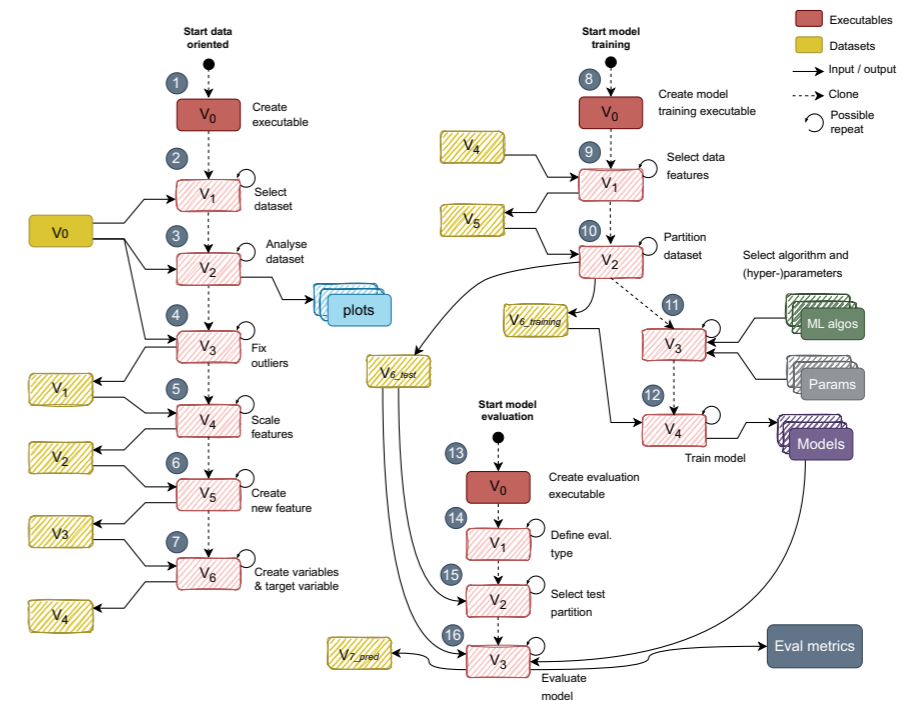
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