

# Machine Learning Model Selection Challenges and Solutions

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**ABSTRACT:** Although Machine Learning (ML) is of growing importance, ML projects face many challenges that may impact the model's success and the accountability of outcomes. The performance of the selected model is very sensitive to a design decision, and most enterprises lack experts in model designing. This presentation focuses on the challenges and solutions of building ML models for organizations and why they are turning to Automated Machine Learning models.

In general, though, lack of experience in setting clear goals, failure to assign skillful team members, poor data quality, rapidly changing data, complex algorithms that become obsolete when data grows, and selecting the best model among many different models, are some of the common critical issues ML Project Managers (PM) faced in developing an ML project. Additionally, the ML field lacks the required expertise to perfect all those tasks. Therefore, PMs are getting more interested in Automated Machine Learning (AutoML) which makes ML accessible to interested scientists who do not have the resources. The model selection will be automated and data-driven. Based on the resource availability, the PM may consider to semi-automate some of the tasks but gradually eliminating the human intervention. The long term goal is to develop powerful tools that will help make the practice of ML more systematic and more efficient

In this presentation, we will demonstrate how the emergence of AutoML can solve the repetitive and redundant process of modeling and tuning. It enables the enterprises to experiment with a variety of models and helps the enterprise increase the efficiency of problem-solving or to get a more accurate result.

**Key Words:** machine Learning, automated machine learning, mode, design