

Machine Learning Lifecycle

Building or training a machine learning model is a long process. We can't just train a model once and leave it alone as there's a lot more to machine learning lifecycle — **data changes, preferences evolve, and competitors will emerge.**

Therefore, we should keep our model up to date when it goes into production.

- While we don't have to go through the same level of training that was required when creating the model, however we can't assume that it will be self-sufficient.

The machine learning lifecycle is continuous and choosing the right machine learning model is important. The stages of machine learning lifecycle are as follows:

1. **Identify data:** Identifying relevant data sources is the first step in the cycle. Further when developing machine learning algorithm, consider extending the target data to improve the system.
2. **Prepare data:** Make sure our data is clean, secure, and governed. If we will build a machine learning model based on less accurate data, the application will fail.
3. **Select Machine Learning Model:** We can have multiple machine learning algorithms applicable to our data and business challenges.

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4. **Train:** We must train algorithm to build the model. Depending on the type of data and algorithm, the training process can be supervised, unsupervised, or reinforcement.
5. **Evaluate:** Evaluate our machine learning models to find the best performing algorithm before deploying it to production.
6. **Deploy:** Machine learning algorithms create models that can be deployed in both cloud and on-premises applications.
7. **Prediction:** After deployment, start making predictions based on new incoming data.
8. **Evaluate predictions:** Evaluate the validity of our predictions. The information we collect by analyzing the validity of predictions is then fed back into the machine learning cycle to improve accuracy.

Once our model has started making predictions, start the process again by evaluating the data we are evaluating;

- Are all the data relevant?
- Are there any new datasets that could help improve forecast accuracy?

By sticking to this machine learning lifecycle and continuously improving models and evaluating new approaches, we will be able to maintain the relevance of our machine learning-based applications.