



Machine Learning Project Checklist

The items on this checklist come from various sources, such as [Machine Learning Yearning](#), [Full Stack Deep Learning](#), [Building Machine Learning Powered Applications](#), and also from my own personal experience. This is work in progress, and contributions are welcome. If you have any additions, please submit a PR to [this repo](#).

Before modelling

Project

- ☐ The project has a clear, codified business goal/metric.
- ☐ There is a person who is ultimately responsible for the success/failure of the project.
- ☐ We have a plan for how to reach a first deployed end product as fast as possible.
- ☐ We have decided on how and when to keep the team in sync (daily/weekly standups, retrospectives, planning meetings, etc)

Problem understanding

- ☐ We have decided on one single metric on which to rank my models.
- ☐ We have clarified the costs of the different kinds of erroneous predictions.
- ☐ We have an understanding of how good performance is "good enough"
- ☐ We know the constraints in serving time w.r.t. memory usage.
- ☐ We know the constraints in serving time w.r.t. latency.
- ☐ We know the constraints in serving time w.r.t. throughput.
- ☐ We know if we're doing streaming- or batch prediction.
- ☐ We understand the current state of ML applied to the problem we're trying to solve.
- ☐ We have an idea of how important freshness is. How often will we need to change the model?
- ☐ We have domain experts who can help us understand the problem and error modes.
- ☐ We know where the model will be deployed (server / client, browser / on device)

Data

- ☐ I have selected a dev- and test set that are reflective of the real task I'm trying to solve.
- ☐ My dev- and test sets are from the same distribution.
- ☐ My dev set is large enough, so that I can detect improvements to the desired accuracy.
- ☐ We understand how to split the data into train/val/test to avoid data leakage.
- ☐ If we need to collect data, we know how difficult and costly it will be to collect and annotate.
- ☐ We have a plan for how to store and version our data, dataset splits, models, and change in annotations.
- ☐ I get a reasonable ["ML Test Score"](#), table 1.

Modelling

- ☐ I have one or several well thought out baselines in place. These are not good enough, so there's an actual need to use ML.
- ☐ There's a metrics webpage where I can compare runs and the url is _____.
- ☐ We can (approximately) reproduce a model if needed.
- ☐ I get a reasonable ["ML Test Score"](#), table 2.

Deployment

- ☐ We have CI in place.
- ☐ We have tests for the full training pipeline.
- ☐ We have validation tests.
- ☐ We have functionality tests.
- ☐ We have unit tests.
- ☐ We have CD in place.
- ☐ We have CT in place.
- ☐ Blue/green deployment in place.
- ☐ We can deploy a model in shadow mode.
- ☐ Monitoring in place for memory consumption.
- ☐ Monitoring in place for CPU consumption.
- ☐ Monitoring in place for latency.
- ☐ Monitoring in place for downtime.
- ☐ Monitoring in place for requests per second.
- ☐ Monitoring in place for prediction confidence over time.
- ☐ We have a way of detecting if a model will fail on a given datapoint, and a corresponding fallback.
- ☐ I get a reasonable ["ML Test Score"](#), table 3-4.