

## Machine learning—machine calibration data

Before producing beautiful 3D models that look good and fit well, laser cutters, expect users to perform a long and often frustrating manual calibration process. This makes it all but impossible for non-experts to operate these machines, which really holds the field back.

**Your job:** make laser cutters operate more like a toaster: insert material, push button, and get good results.

**Here is how:** we have data from past successful uses. Use this as training data to predict today's parameters based on past use. Try out various machine learning methods, such as Markov chains, Gaussian process, deep learning... hybrid models.

**Objective:** Predict 18 features, both continuous and categorical: material type, material thickness, hierarchical machine type, laser type, maximum nominal laser power, maximum nominal machine speed, ... and 10 target values: laser power, speed, kerf, focus height, gamma correction... Additional challenge: how many samples do you need to make predictions for a laser cutter type or a material not part of the original training set?



**Your project:** develop and test machine learning techniques on real data. Test and embed your models in a **real-world** application scenario. Hook up your code to a modern micro-service architecture.

**And then deploy.** Help thousands of users worldwide save time and resources—and thereby extend the scope of personal fabrication to a non-technical audience.

### Contact

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