

Automating Quality Testing of ML Models

Florens Greßner

CEO neurocat GmbH

Abstract

Artificial Intelligence (AI) systems are evolving at a very rapid pace to make our lives easier with every passing month. Advances in the academic coupled with miniaturization of hardware requirements in deploying models has made most of the models available off-the-shelf for developers which do not require further expertise to modify the models to make them suitable for the end applications they are targeting. These AI systems are built using Machine Learning (ML), which uses vast computational networks that grow in complexity as the tasks they handle evolve to achieve the needed performance targets. With models being available off-the-shelf and their complex computational nature, makes it harder to interpret or control the model's output. Especially in Robotics, noise in the environment and the sensors leads to misclassifications, because the training dataset is not a complete representation of the production inputs. Hence, most of the ML models that we are using and are exposed to in our daily life are not robust and thus have a grave quality concern that needs to be addressed.

Biography

Florens Greßner, is a Mathematician with the focus on Statistics and Optimization. After diving into the abstracts of academic Mathematics he realized that real world applications, such as Machine Learning, suffer from the absence of profound mathematical understanding and a structured approach towards optimizing respective quality parameters. At the age of 22 he co-founded neurocat to concentrate his efforts to pave the way for a safe and innovative future, by consulting the industry in risk assessment, robustness, and interpretability of AI systems. For 5 years he gained experience in AI Quality Consulting and the development of respective Test Methods and Strategies in several domains such as Automated Driving, Unmanned Aircraft, Chatbots, Voice Assistants and Virtual Sensors.