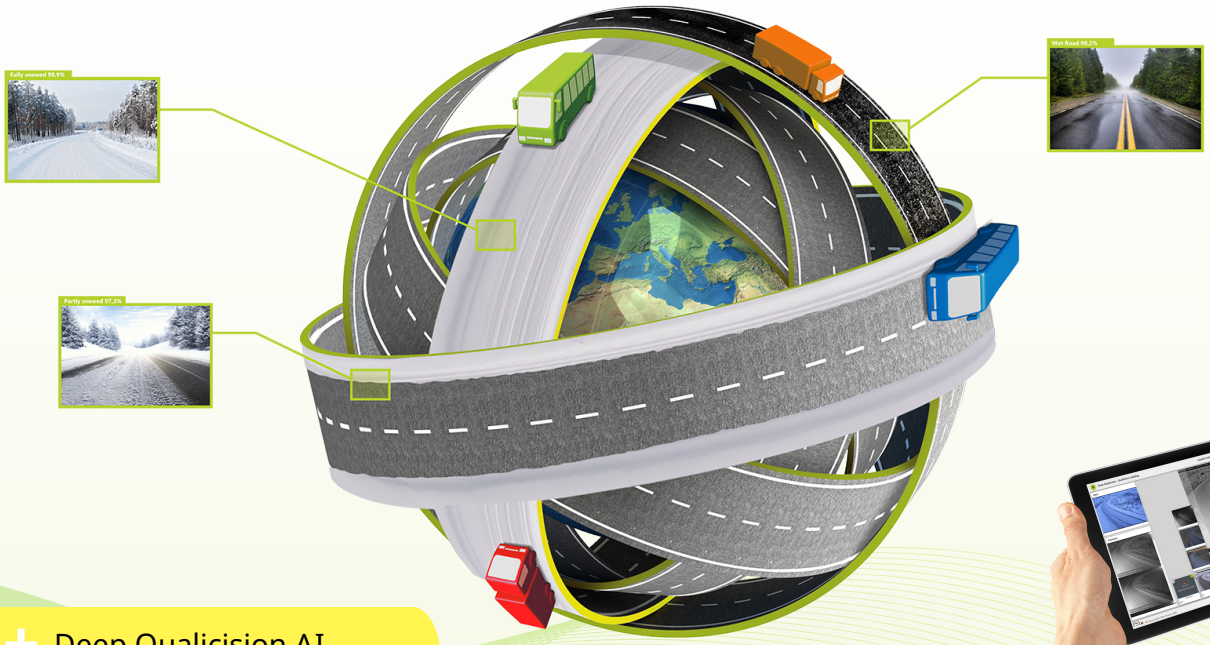

+ Deep Qualicision AI

Labeling and Analysis of Road Surfaces with Artificial Intelligence

Deep Qualicision AI - the software tool for multi-user data labeling

+ Qualitative Labeling of image data by multiple users
+ High labeling rates by clear structured frontend design
+ Assisted live evaluation and automated network training
+ Easy integration of further machine learning models
+ Fast, highly available data provision
+ Project-based data administration environment

PSI

What is labeled data and why is it so important?

Labeled data is processed data that has already been assigned a meaning before the AI learning process. This way it can be used by a suitable AI process with the aim of creating a model of this data in order to automatically recognise similar data patterns in future data based on this model. Labeled data is the bridge between data patterns and their real-world meaning. — Dr. Rudolf Felix

Deep Qualicision Qualitative Labeling Tool

The DQQL web-based labeling tool comes into play right here already where in this use-case image data of several road sections needs to be qualitatively labeled manually prior to have a neural network distinguish between different road surface states such as wet, partly snowed, snowed or even iced. DQQL provides a project-based administration which lets several human interpreters work on different data set projects. Due to its functional, simplistic front-end framework users can focus entirely on their image classification task.

The figure shows road condition images taken along the E8 road from Skibotn in Norway and the Finnish border. In this project, images from up to 24 cameras were provided every 30 minutes and labeled with DQQL. With timestamps included in the footage, the labeling tool is able to assist the user by displaying a range of past and future shots to distinguish even uncertain road conditions in difficult lighting conditions.

Simultaneous network training and decision support

While manually labeling image data can be a challenge especially facing vast amount of data, Deep Artifical Convolutional Neural Networks (CNNs) were trained in parallel already. The network provides the user with suggestions scooped from the continuously trained knowledge base in real-time while refining its predictions in a human-machine symbiosis. Up to the point where neural networks have built their own qualified judgement abilities human's pre-interpretation still lays the groundwork for highly accurate machine predictions.

Deep Qualicision Labeling is the go-to solution for small single projects as well as entire crowd-sourced labeling projects providing multi-user, multi-project administration including latest scores and charts revealing insights of the current and overall labeling state at any time.

Highly available and fast data provision

As immense data collections in labeling projects are broadly common, if not key to success, DQQL is equipped with Minion, an AWS S3 compatible storage provider. Now even larger amounts of data can be managed efficiently. The Deep Qualicision Qualitative Labeling Tool is ready for its migration to PSI Java Framework and can be obtained directly from the PSI AppStore in the upcoming future. From connecting neural networks, to structured image data collections, to independently interpreting networks, DQQL is the first choice for labeling projects.

PSI FLS Fuzzy Logik & Neuro Systeme GmbH
Joseph-von-Fraunhofer-Straße 20 · 44227 Dortmund · Germany
info@fuzzy.de · www.deepqualicision.de