

Techniques based on Deep Learning (DL) have proven their efficiency in many application domains including patient screening in the medical field, inspection, surveillance, security, and image indexing.

Applications based on DL usually include a 5-step process:

- 1) Collection and selection of representative data;
- 2) Manual annotation of a collection of elements in the dataset and their association with a class;
- Selection of the most appropriate DL network architecture for solving the classification problem. An expert in the field is usually responsible of this task;
- 4) Training of the network using the annotated database;
- 5) Evaluation on a new dataset that was not used for training.

All these applications cannot be developed without large annotated databases, which are mandatory to achieve state-of-the-art results, although new techniques based on few shot learning are now available. Unfortunately, the manual annotation task is the most time-consuming step since it involves a lot of manual interactions and checking. Thanks the advanced capabilities available in the Annotate Software developed and marketed by ADCIS, users can build high quality databases that let the user generating an efficient Convolutional Neural Network.

The main features of the Annotate-MG (Manual Grading) software product include:

- Configuration setup to adapt to any application domain;
- Support of images and videos;
- Fully configurable software product to adapt to the specific application;
- Very intuitive user interface including keyboard shortcuts, specific windows to display the annotation progress, and statistical information.



An intuitive user interface is the key to a successful annotation process. Annotate-MG was developed keeping in mind the less the user interacts with the mouse, the more efficient and less cumbersome is the annotation task. Although the software is fully configurable, the interface only displays relevant information needed to store images or objects of interest into classes.



Annotate-MG takes as input raw images or videos, or images that have been already processed by a CNN. It lets the user then editing existing annotations and amending them to generate a new model. In addition to the Annotate-MG software, Annotate-MS (Monitoring System) is the best tool to monitor in a web page the annotation process performed by one or more graders. It generates work lists per grader and it helps for reconciliation between graders and experts.

ADCIS Services

Model generation

ADCIS can help you adapting Annotate-MG to your specific needs.

The ADCIS engineering team is highly qualified to develop the most powerful DL model that will solve your application. The company worked successfully on three applications that have been highly publicized, the automatic detection and recognition of signals along Belgian railways, the automatic grading of Diabetic Retinopathy in the field of ophthalmology, and the surveillance of industrialized sites performed by a drone.



Integration and Deployment

The Aphelion Imaging Software Suite that has been developed by ADCIS over a period of 25 years now includes a specific Deep Learning extension. Both Annotate-MG and MS are fully compatible with the Aphelion Suite. The format of the annotation export is compatible with Aphelion, MySQL, and TensorFlow.



Maintenance services

Maintenance services are proposed by ADCIS for all its software products and custom engineering works.

Main benefits of Annotate software

- Adapted to a wide range of applications thanks to its in-depth settings
- Able to handle both image sets and videos
- Highly configurable GUI helps to reduce time spent on annotations
- Output selection suited to any kind of training (image classification, detection/identification, image segmentation, etc.)