Bilberry

AI Intern
TECHNICAL REVIEW
Deep Learning & Computer Vision

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1. Technical Exercice

a. Context

At Bilberry, a big part of our new problems can be tackled with Computer Vision. As a majority of Computer Vision problems rely on image datasets (for supervised machine-learning algorithms) we would like you to handle a dataset of field and road images.

b. Your Goal : Create a two class classifier : Field & Road

❖ Your goal is to create the BEST two class classifier possible : Field & Road using only the available data. Note that we will evaluate your model on another dataset.
❖ You can use any Deep Learning framework (Note that we have a slight preference for Tensorflow). Also keep in mind that the exercise will be reviewed under linux.
❖ Feel free to be creative but we want you to justify any of your choices (architecture, training parameters …). A code description for the different choices you made is highly desirable. Moreover you should be able to talk about all these choices during a potential interview.
❖ Performance matters but creativity and justifications as well.

Data is available here.

2. Theoretical Questions

At Bilberry, we always keep an eye on state of the art publications to apply cutting edge solutions to improve our products. As a member of the AI Team, we expect that you also have this mindset.
Moreover a big part of the internship will be about selecting data in order to improve computer vision algorithms.
So we want you to answer the questions :
● How would you automatically select the best unannotated images in order to improve a computer vision classification algorithm ?
● What techniques would you use ?
● What do you know about active-learning (in deeplearning) ?

We are waiting for 1 page maximum.