

Seminar in Business Analytics: Image Content Analysis on Instagram using R and Python

Winter Term 2019/2020

Course Description:

The social media platform Instagram is steadily gaining popularity and has recently crossed the mark of one billion monthly active users. Instagram is most widely used to share and comment images or videos. In particular, younger users discovered Instagram as an alternative to Facebook. This user base offers a great potential for advertisement and marketing purposes.

In order to perform an efficient analysis of Instagram content, there is a need for tools, which allow for an automatic detection of different image characteristics, such as the presence of a human, the background or the degree of advertisement. In addition, it is important to understand the content preferences of Instagram users in terms of likes and comments. The creation of such a tool is the main task of this seminar.

Tasks:

Participants of the seminar will work on the following tasks:

1. Creation of a manually labeled dataset. Each participant will label the dataset through our optimized web interface, which allows for an efficient labeling process.
2. Each participant will create his/her machine learning model to predict one or more of the following image features:
 - a. Presence of a human
 - b. Background
 - c. Degree of advertisement
 - d. Number of likes and number of comments
3. All models need to be submitted as Python or R Code, so that the performance of all models can be evaluated on a disjoint out-of-sample dataset, which will be provided by the supervisors. There will be a prize for the best performing model.

Requirements and Grading:

Participants have to submit the code of their model and a 10-pages report, which describes their model. In addition, participants must present their approach in a 10-min presentation during the final meeting. The grading is based on the code, the report, and the presentation, where each part contributes equally to the final grade. The task assignment and grading will account for participant's level of experience in programming and analytics.

Target Group:

This Seminar specifically addresses students all IMP disciplines, as well as in the M.Sc. Economics and M.Sc. VWL programs. Interested and committed B.Sc. VWL and BWL students may also participate. Students from Computer Science with a minor in Business Administration are also welcome.

Organization:

Registration: **October 1 – October 27, 2019**

Application via email to bernhard.lutz@is.uni-freiburg.de with the following details:

- First name, last name
- Matriculation number (Matrikelnummer)
- Study program, semester
- Transcript of records (Leistungsübersicht)
- Short description of experience level in Python or R if available

Response whether application was successful will be sent out shortly after the registration deadline

Schedule:

First meeting: October 31, 2019 at 4:15 pm
Room: TBA

Second meeting: TBA

Submission of model: January 15, 2020

Final meeting: Last week of January 2020, exact date TBA

Submission of report: February 15, 2020

Communication:

All announcements, instructions, datasets, etc. will be sent via email.

Credit points: 4 ECTS for Bachelor, 6 ECTS for Master

Credit points are applicable to:

- B.Sc. BWL PNPM: Allgemeine BWL
- B.Sc. VWL: BWL, Wirtschaftsinformatik
- M.Sc. BWL PNPM: Allgemeine BWL, Wirtschaftsinformatik
- M.Sc. VWL (2011): BWL, Wirtschaftsinformatik
- M.Sc. VWL (2014): Business Analytics
- M.Sc. Economics: Elective in Information Systems and Network Economics profile
- M.Sc. Computer Science: Wahlmodule BWL und VWL

Chair:

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