

Computational Intelligence in Engineering

Week 12 - Project B: Cell classification using convolutional neural networks



Copyright

The following rules apply to all participants in a learning room with regard to the materials provided in it:

All content, especially texts, videos, photographs and graphics, are protected by copyright. They may only be used within the limited group of participants in the Moodle Learning Room and for private purposes.

Outside of the protected Moodle Learning Room, the content may not be copied, modified, reproduced or published in whole or in part without the prior written consent of the copyright holders or legal permission. The sharing of the content beyond the limited number of participants in the Moodle Learning Room is therefore a publication requiring permission.

Content published under the "Creative Commons License" is marked as such. They may be used according to the stated license conditions.

Anyone who violates copyright law (e.g. copying or sharing images or texts without permission) is liable to prosecution according to §§ 106 ff UrhG (German Copyright Act), will also be warned for a fee and must pay damages to the rights holder (§ 97 UrhG).





Project B: Cell classification using CNN

- Evaluation Examen registration
- Project overview
- Project steps



Evaluation – Examen registration

Evaluation: Links provided (Moodle)

Examen registration:

Please register for one of the two options in RWTH Online.

If you can not register in RWTH Online, please use this form and send it via email. (TO: thaler@iam.rwth-aachen.de & lehre@iam.rwth-aachen.de)

https://www.maschinenbau.rwthaachen.de/global/show document.asp?id=aaaaaaaaabaulrj





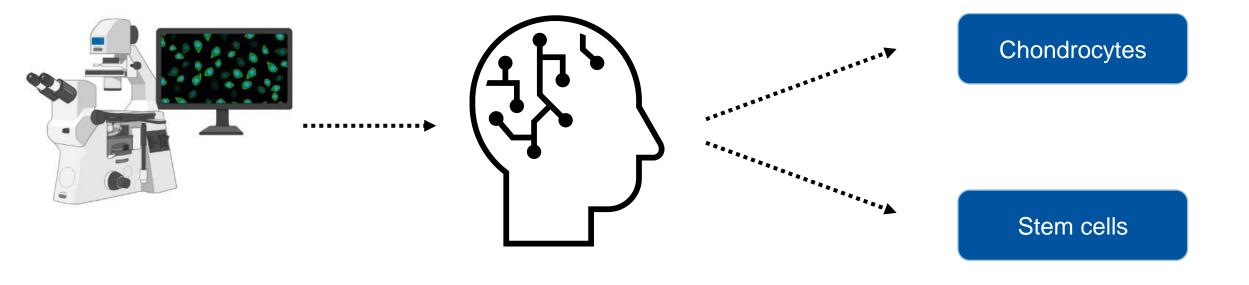
Project B: Cell classification using CNN

- Evaluation Examen registration
- Project overview
- Project steps



Project aim

Binary classification of cells





Project aim

Binary classification of cells

- Work in groups
- Each group will work on the same data with different tasks
- Project duration: 3 weeks
- Questions are welcome (Use Moodle / Consultation hours!)
- February 4: presentation and code submission
- Presentations: February 4 and February 11





Project B: Cell classification using CNN

- Evaluation Examen registration
- Project overview
- Project steps



Project steps

Project start

Today: January 14th

Week 1

- Image Preprocessing
- Data Augmentation
- Individual group task

Online consultation

- January 28th
- Ask questions on Moodle

Week 2

- Implementation of a convolutional neural network for classification
- Further Preprocessing

Week 3

- Tuning of the model
- Preparation of the presentation

Presentation / Code submission

January 4th

Online consultation

- January 21st
- Ask questions on Moodle





Group Tasks - Example

- 1. Image preprocessing: grayscale
- 2. Data Augmentation: flipped images
- 3. CNN Architecture: VGG 16
- 4. Result: Accuracy with / without Data augmentation

Define your basic project task until January 21st

Improve your initial proposal during your project. In your presentation, mention what you have changed and give reasons.



Project B

• Questions?

Start your project

Don't forget the evaluation



Thanks for your attention!

