

**ENGINNERING FACULTY - COMPUTER ENGINEERING DEPARTMENT**

**BIOMEDICAL IMAGE PROCESSING AND MACHINE LEARNING**

**2022-2023 SPRING**

**FINAL PROJECT REPORT**

**INSTRUCTOR** : Assoc. Prof. Dr. Ahmet Çağdaş SEÇKİN

**STUDENT NAME** : …………………………………………………………..

**STUDENT ID** : …………………………………………………………..

**OTHER GROUP MEMBERS**

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**INSTRUCTIONS AND TABLE OF CONTENTS**

1. The project report will be prepared using the attached format. Do not forget to update the table of contents. Please do not deform the template file.
2. The report cannot exceed 20 pages (exclude cover page). Write short and concise descriptions. Points will be deducted for any content that is difficult to understand.
3. The report submission date will not be extended. Use only remote platform to submit project reports. Project report will not be delivered by mail or e-mail. No need for a printed copy.
4. Each student must submit a project report. Submitting the project report by a member of your group will mean that only that member gets points.
5. Coding will be done using python language. The submission of project codes will be accepted as a single submission for each group. Compress the project codes and your data set together as a zip and share them on the drive. Your codes should be ready to run when downloaded. During the evaluation, only your code will be run, and no settings/adjustment will be made.
6. Search and find a image segmentation dataset. Dataset should be unique in project gourps so first you have to send link and get approval from instructor. **Use only 10 images. 9 for train 1 for test. Replicate the dataset by cropping each image in a set of 10 (train and test) raw and mask images into small pieces (square).**
7. Create a semantic segmentation code with conventional feature extraction methods. Provide results: accuracy, training time and IoU. Show 1 test image input, mask and prediction.
8. Create a semantic segmentation code with U-Net, CNN or RCNN. 9 train images must be splited into Provide results: accuracy, training time and IoU. Show 1 test image input, mask and prediction.
9. Prepare report and submit zip of codes, data and report

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# EXPLAIN PROPERTIES OF THE SEGMENTATION DATASET

Explain dataset properties and show train and test images and output masks.

# MACHINE LEARNING METHOD AND RESULTS

Explain the features and machine learning methods in your code. Present test results a show test image mask and result.

# DEEP LEARNING METHOD AND RESULTS

Explain the deep learning architecture. Present test results a show test image mask and result.