TGM Report 5 Implementation 4

Topic #3: VAE-based Medical Image Generator

Tasks

1. Create presentation
2. Finetune VQ-VAE and β-VAE and save the models
3. Last modifications on the frontend (flask app)

Who did what

Felix:

- basic flask template
- further investigation on the CVAE, but ultimately deciding not to use it as it does not fit our needs

Zixuan:

- improvements on VQ-VAE (parameter tuning and adding capability to also train on 1 channel data)

Ruben:

- extended flask template
- improvements on β-VAE (parameter tuning)

Problems

1. CVAE generalizes to much, overfitts to much on the respective classes

Solutions

1. Not to use the CVAE

Outlook

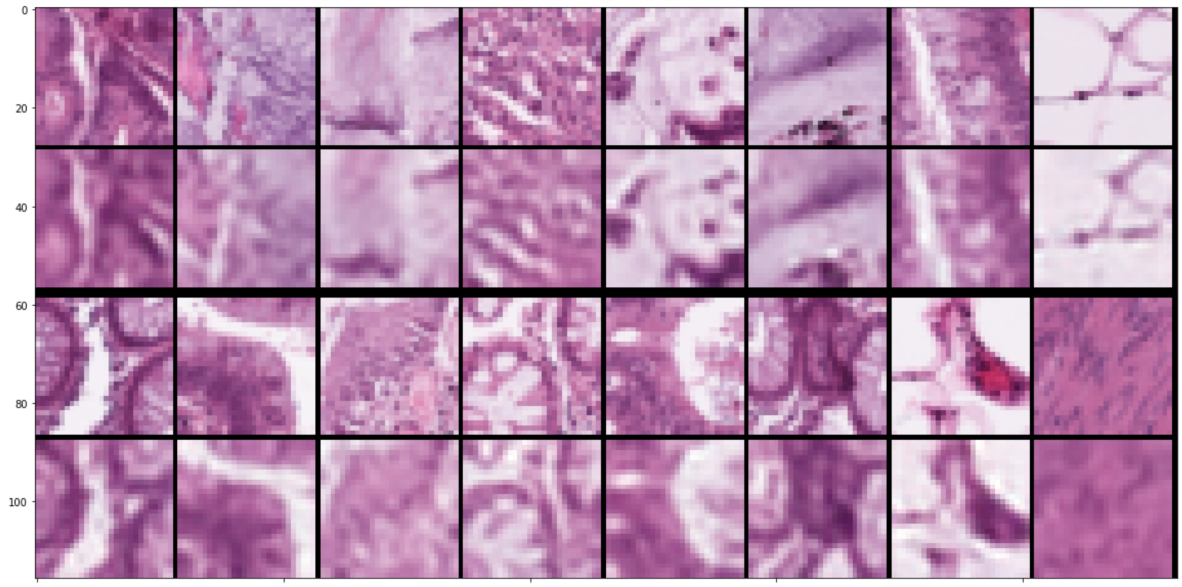
- Have at least 6 trained models (3 for the VQ-VAE and 3 for the β-VAE)
- Working frontend with all the features (being able to select a model and a data set and display images from it)
- We want a presentation which describes our work

Miscellaneous

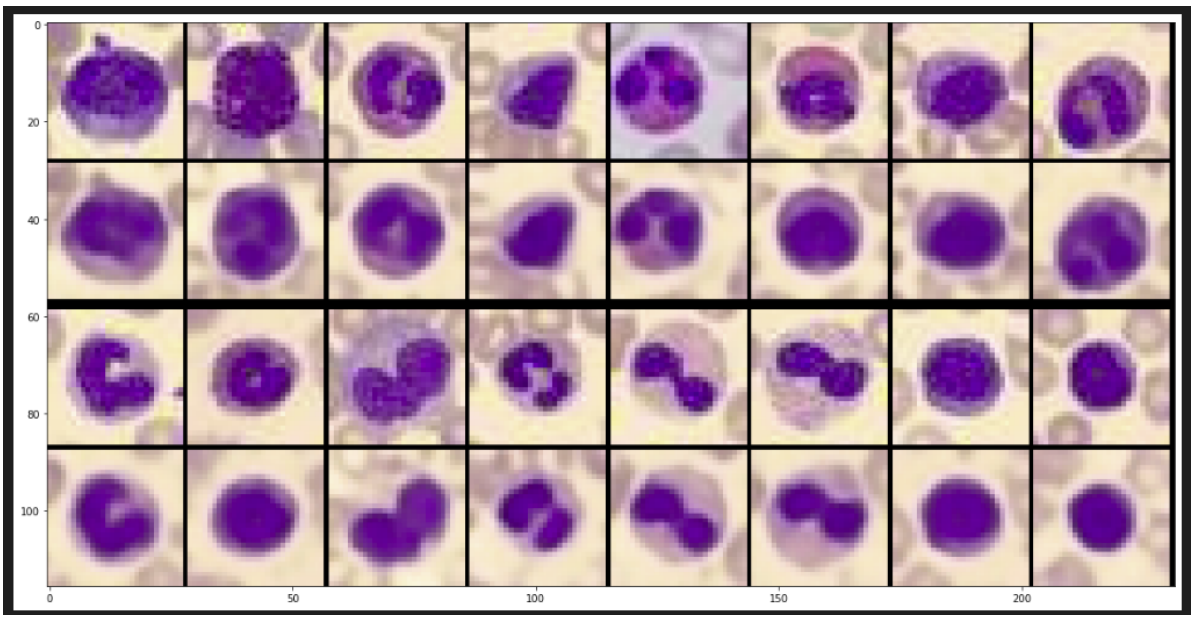
1 and 3 row are ground truth images

2 and 4 are generated images

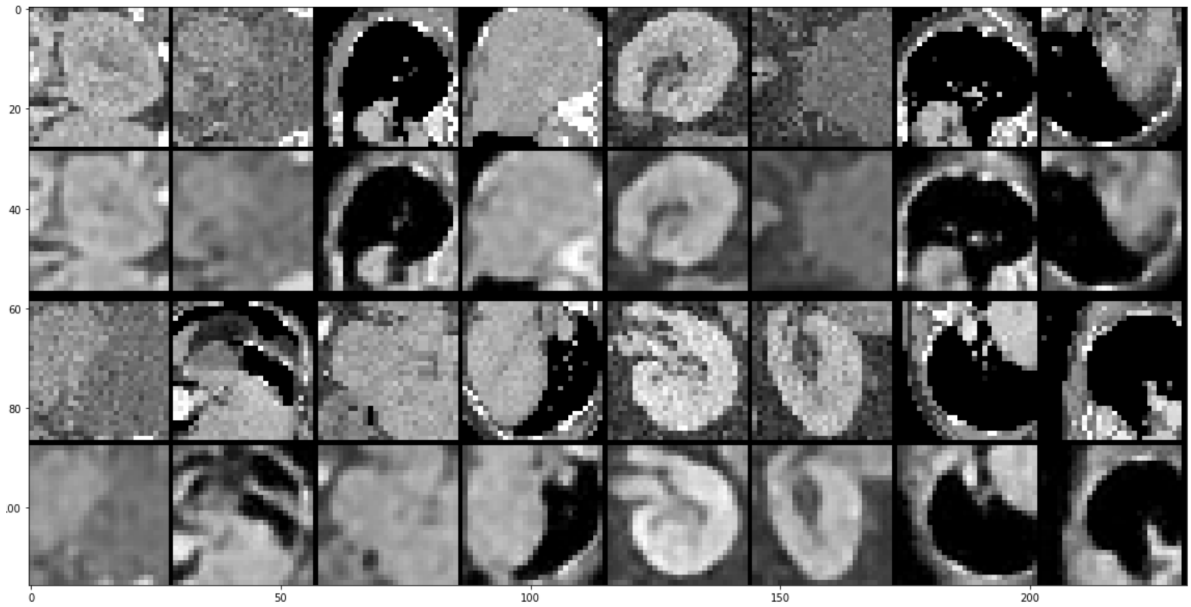
VQ-VAE with PATHMNIST:



β-VAE with BLOODMNIST:



VQ-VAE with ORGANAMNSIT


0
20
40
60
80
.00
0
50
100
150
200