

ERUM

DATA HUB

Challenge

Active Training Course

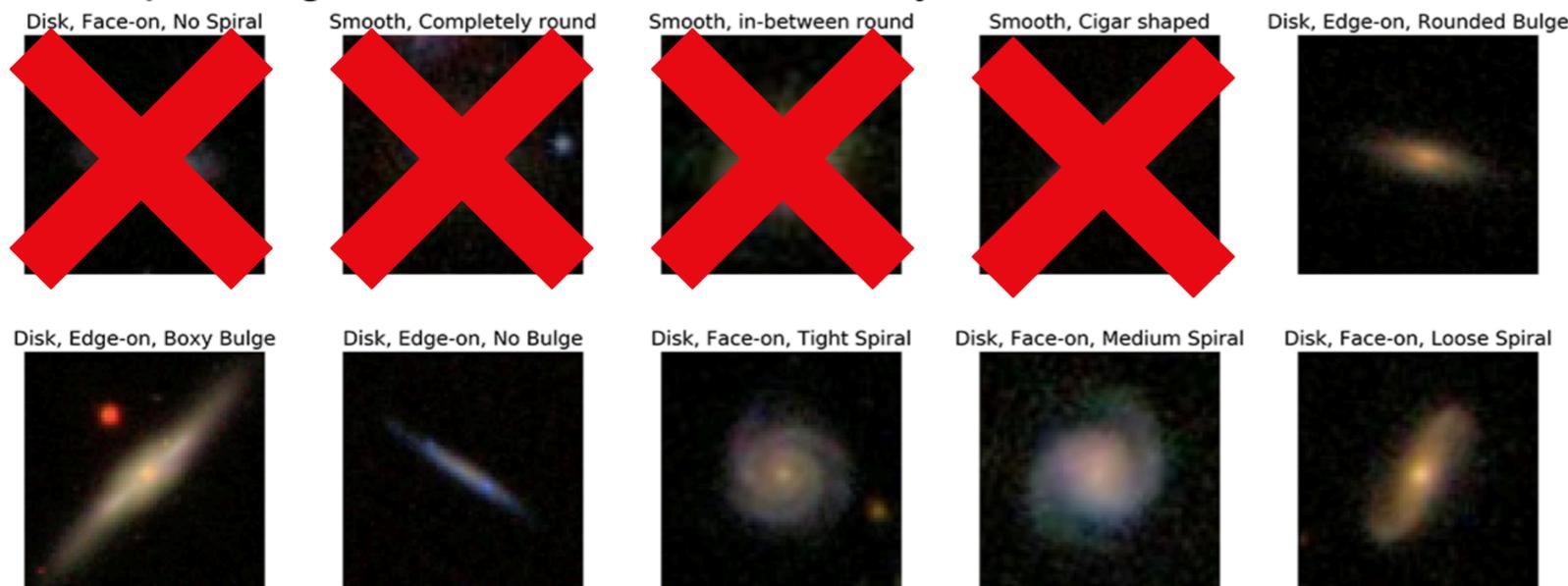
30.11.2022



RWTHAACHEN
UNIVERSITY

- The (MNIST-like) **dataset**:
 - Name: "Galaxy10", Ref: <https://astronn.readthedocs.io/en/latest/galaxy10sdss.html>
 - Minor modifications:
 - First four classes are removed! (→ Class labels: 0..5)
 - Images are cropped to 64x64 pixels

Example images of each class from Galaxy10 dataset



4686 colored
Images

Galaxy10 Dataset: Henry Leung/Jo Bovy 2018, Data Source: SDSS/Galaxy Zoo

- The **task**:
 - Find a galaxy which looks as close as possible to our milky way!
 - *Bonus*: Generate new galaxies which look as close as possible to our milky way.

- Starting point: <https://colab.research.google.com/github/ErUM-Data-Hub/Challenges/blob/main/galaxies.ipynb>
- Conditions:
 - You can use your favourite framework (e.g.: PyTorch, TensorFlow, JAX, ...)
 - You can use any architectures you want (e.g.: GNNs, Transformer, VAEs, ...)
- You will work in a team of 5
- Finally, every team presents their solution in a few slides on Thursday (~10min)
...who will be the  ?

Teams:

Adversarial Attackers

Team ~~Early~~NeverStopping

The tf.keras.optimizers.Adam's Family

The JAXon 5

Liberté, Egalité, Fraternité, Dall-É