



<- Check out our  
Github Repo

# Challenge

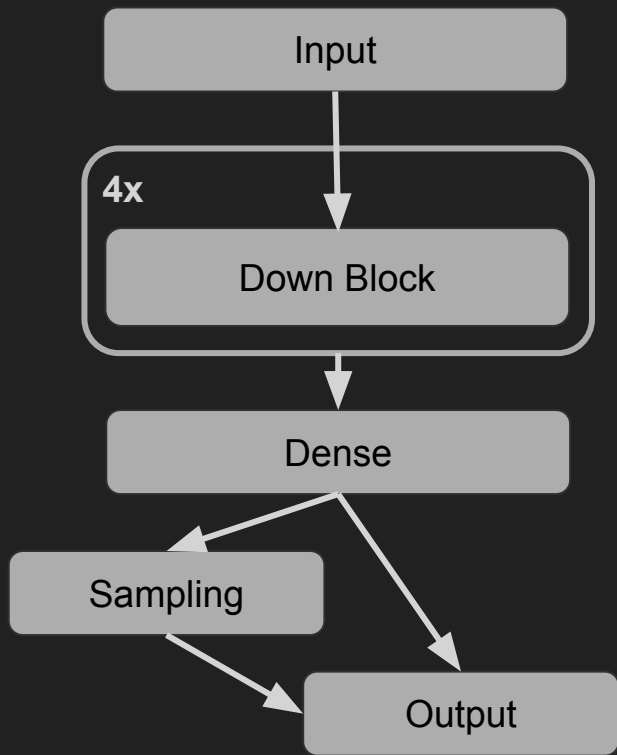
Team ~~Early~~NeverStopping

# How our method works?

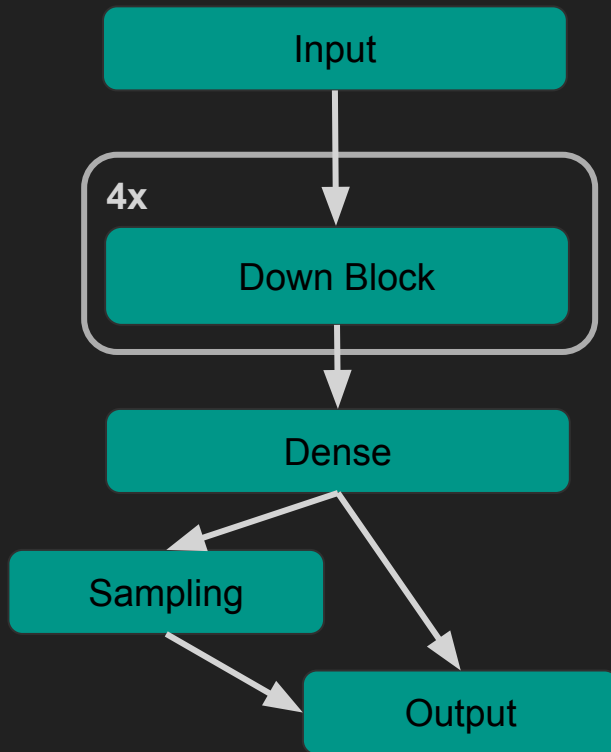
- Train VAE network with all images and all classes provided
- Downloaded milkyway data as test data
- To find closest match :
  - Find euclidean distance between test data and trained data in the latent space
  - Hypothesis: The closest neighbour is the closest match
- To generate new image:
  - Sample data points around the matched latent variable and use decoder to generate new image

# CNN Model

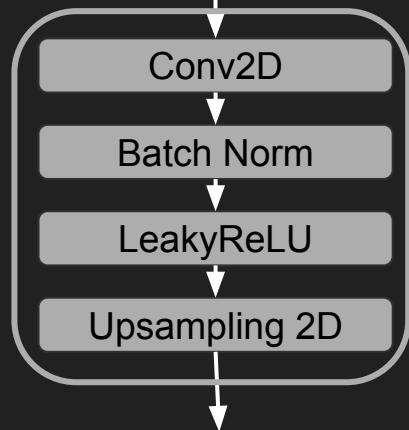
## Encoder



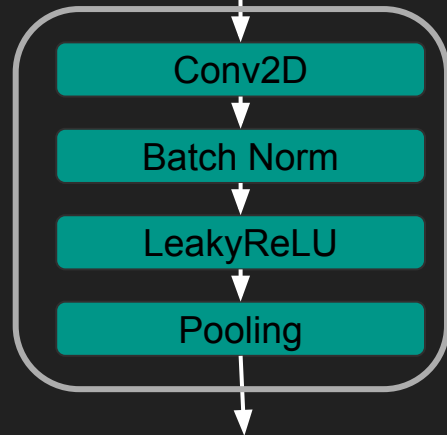
## Encoder



## Up-Block



## Down-Block

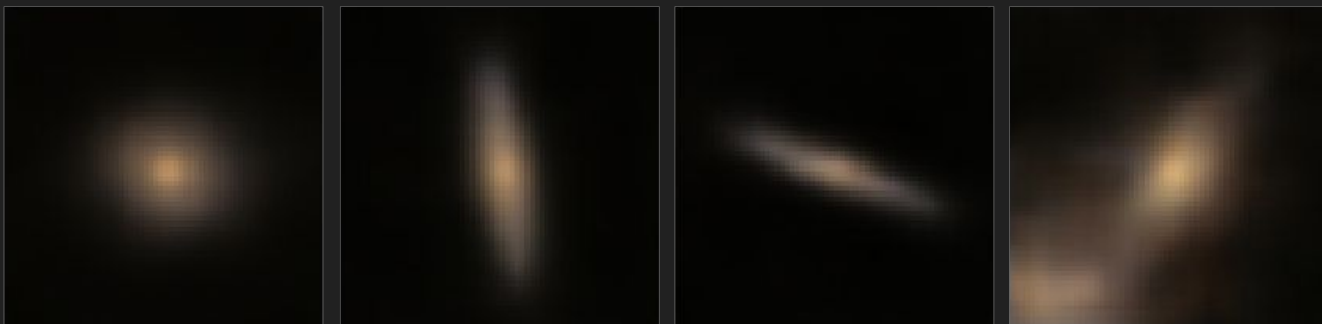


# Performance of the model

**Input**



**Reconstructed**

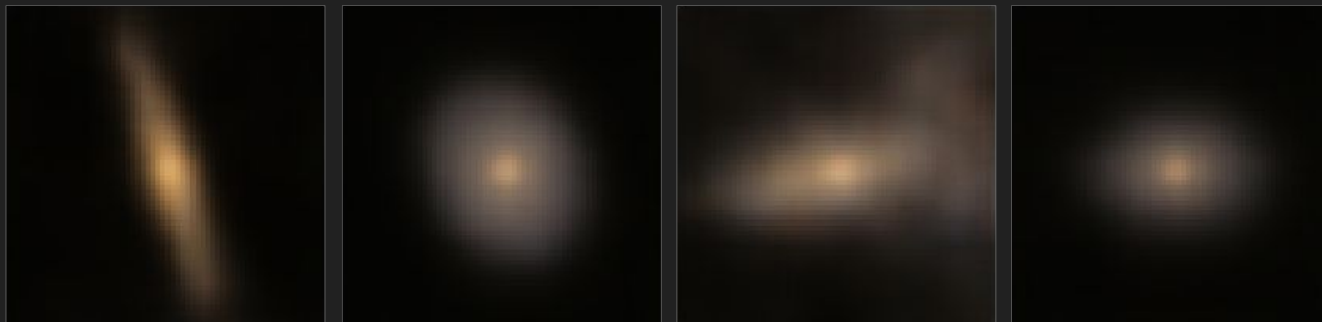


# Performance of the model

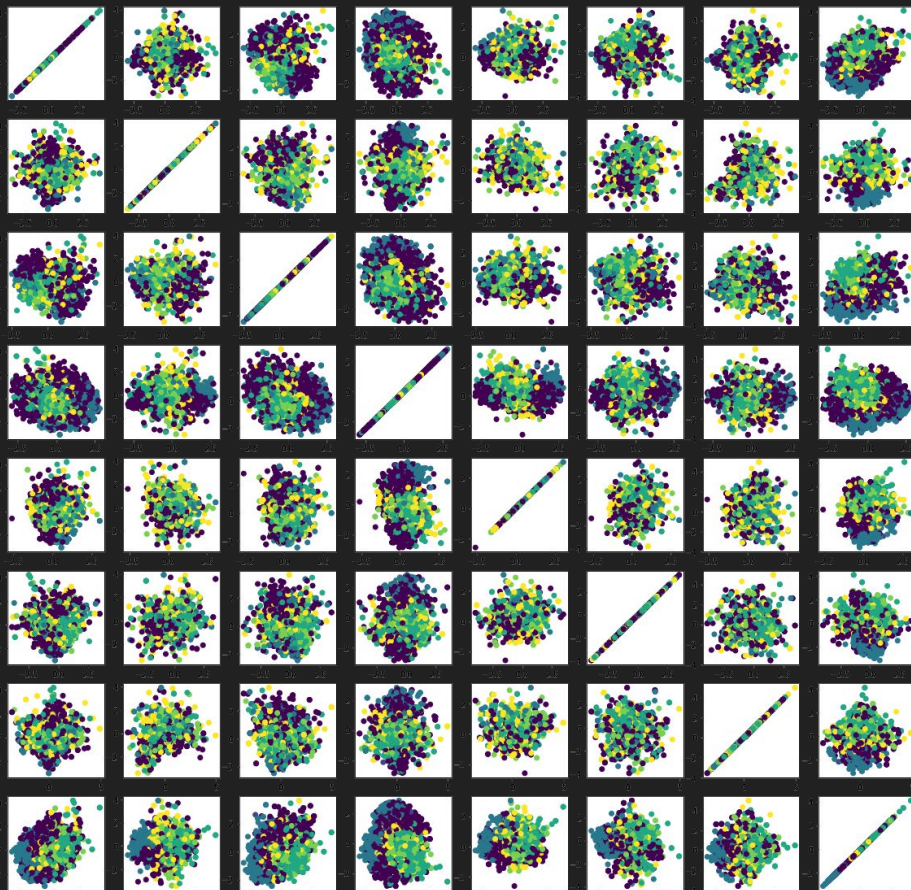
**Input**



**Reconstructed**

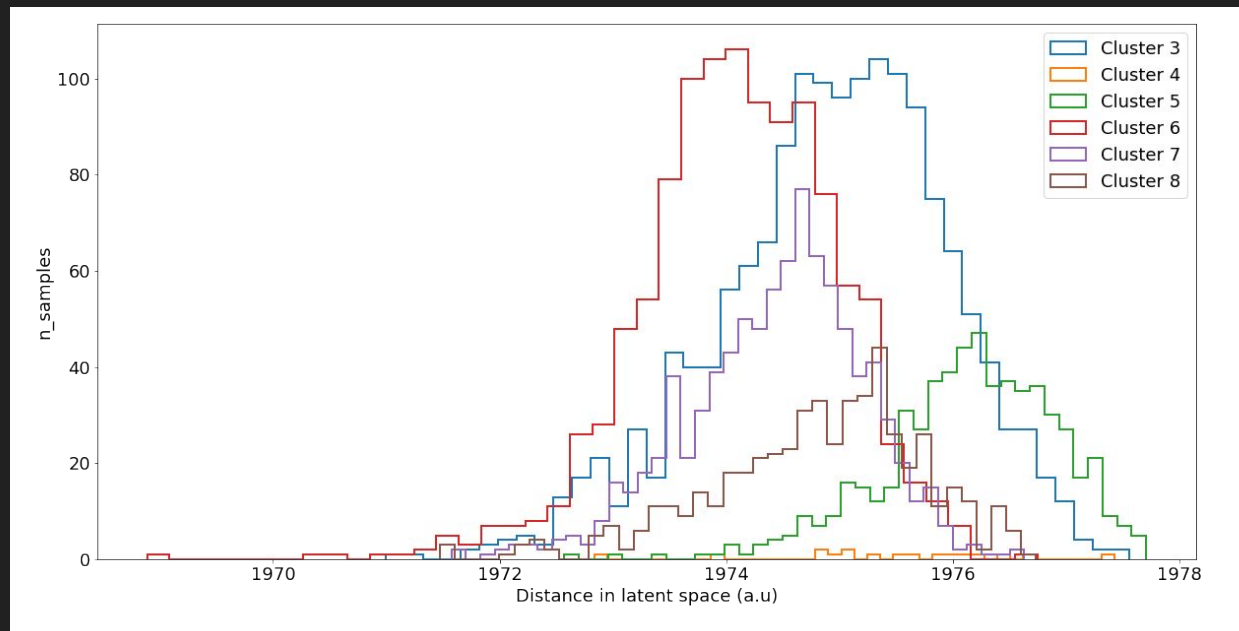


# Visualization of latent space



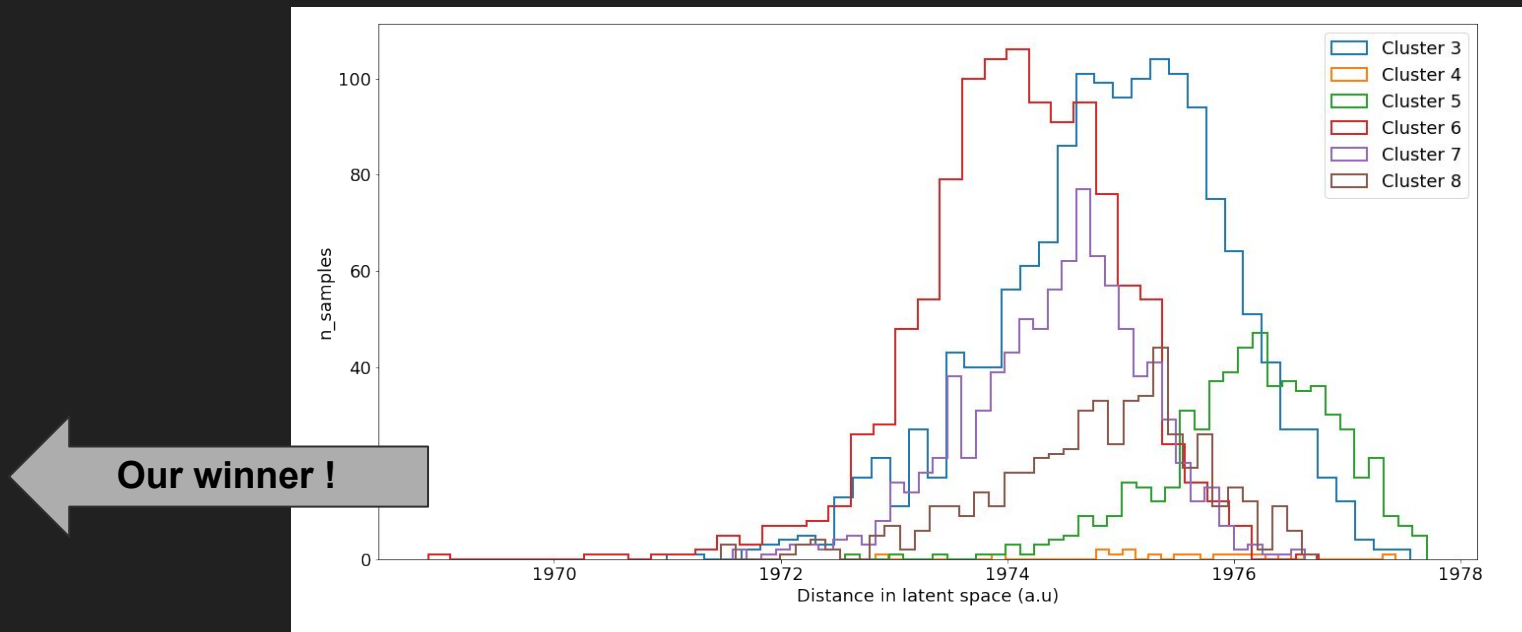
# Distance in L space + our winner

- Euclidean distance in 8-dim
- Histogram classwise distance
- See bit of clustering going on



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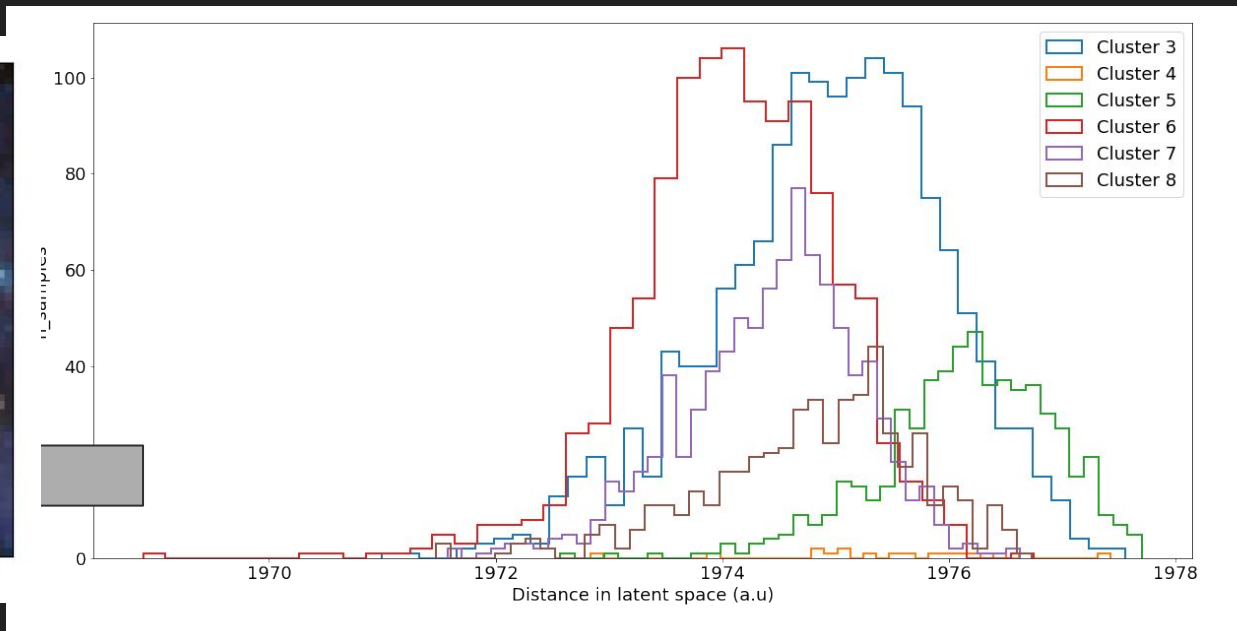
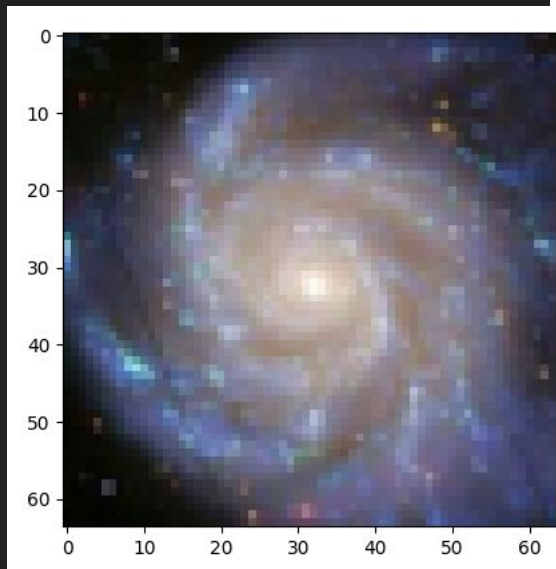




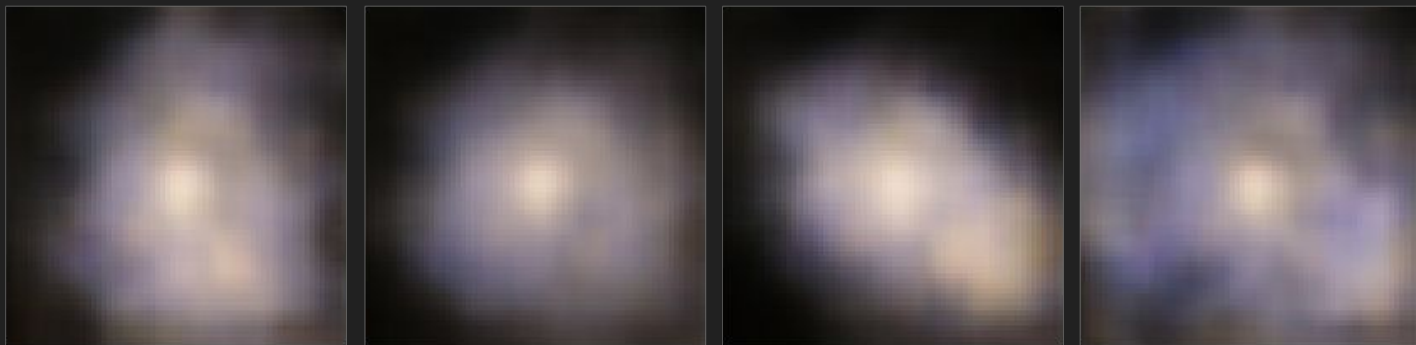
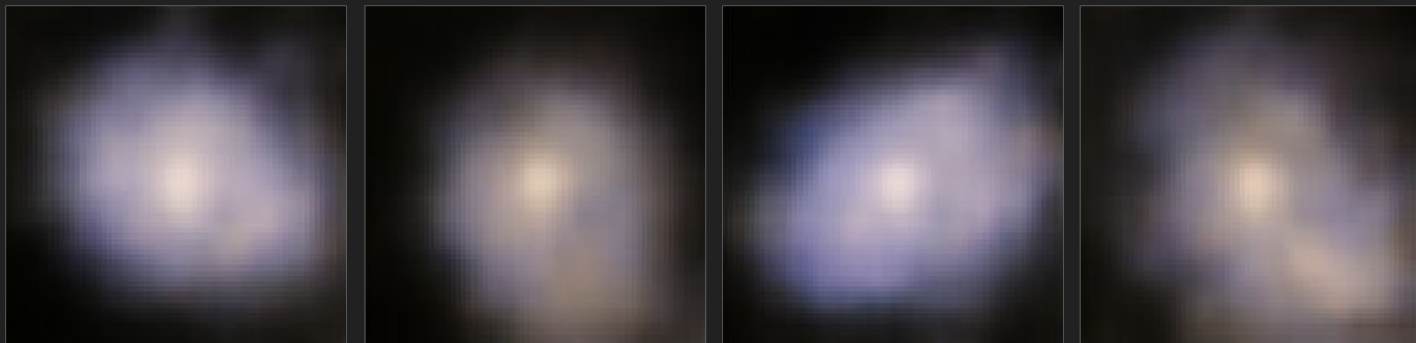
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**Image #4497 @ distance = 1135**



## Examples of the generated images



Examples of the generated images

