Level 4 Project

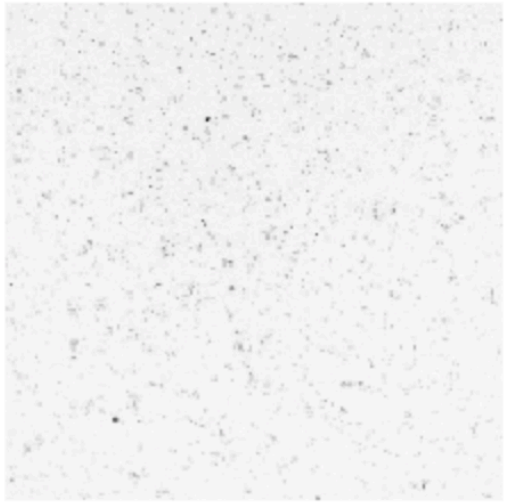
Week 5 Meeting

(Week 4 Recap)

Completed work

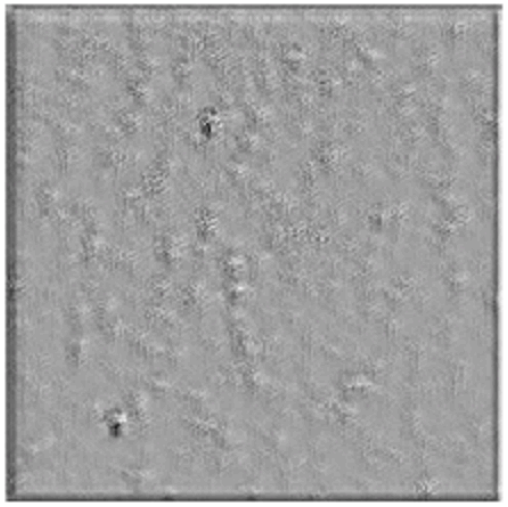
- Tuned autoencoder
  - Followed tutorial on visualising filters
  - Tweaked code according to results
- Current network architecture:
  - More filters in the convolutional layers
  - MaxPooling is done with 1x1 stride rather than 2x2, givs better results

original

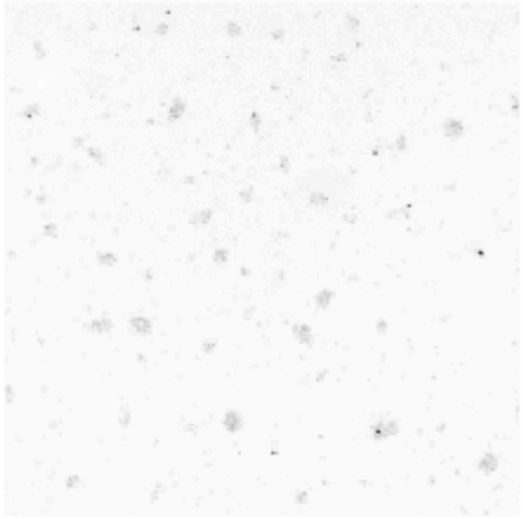


compressed representation

decoded

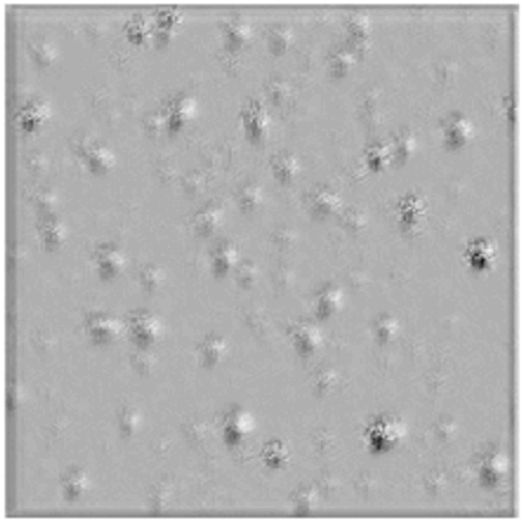


original



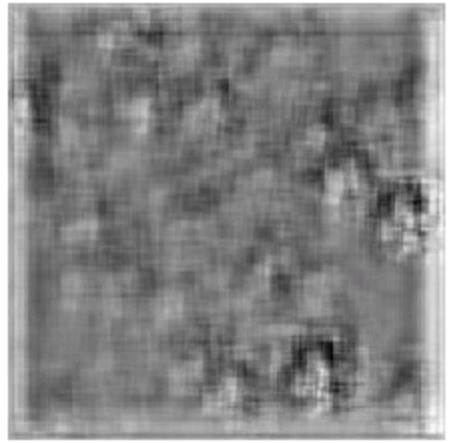
compressed representation

decoded



With pool size (2,2) instead of (1,1) – some tweaking to be done for speed

decoded



Questions

- Should I keep a copy of the outputs whenever I change a parameter? --> for dissertation
- The compressed representation should be lower size than original image, for speed?
- Should I look to get resized images in a new directory?
- Uploading files online for access to Google Colab?
- In the future, if we want this to be a tool: should I make different python scripts that would be runnable in the Terminal, on top of the jupyter notebooks?
  - They’re more convenient for me, but might not be for a user

Rough plan for semester 1 (unchanged)

- (potentially to be reworked following my questions)
- **Week 4**
  - Tuning autoencoder
- **Week 5**
  - Tuning autoencoder
- **Week 6**
  - HPC training day (hopefully will help with running some models)
  - Calculate overlap of images
- **Week 7**
  - Start working on clustering algorithm for image overlaps
- **Week 8**
  - Tune clustering algorithm
- **Week 9**
  - Label t-cell/dendritic cells images:
  - Evaluate clustering performance