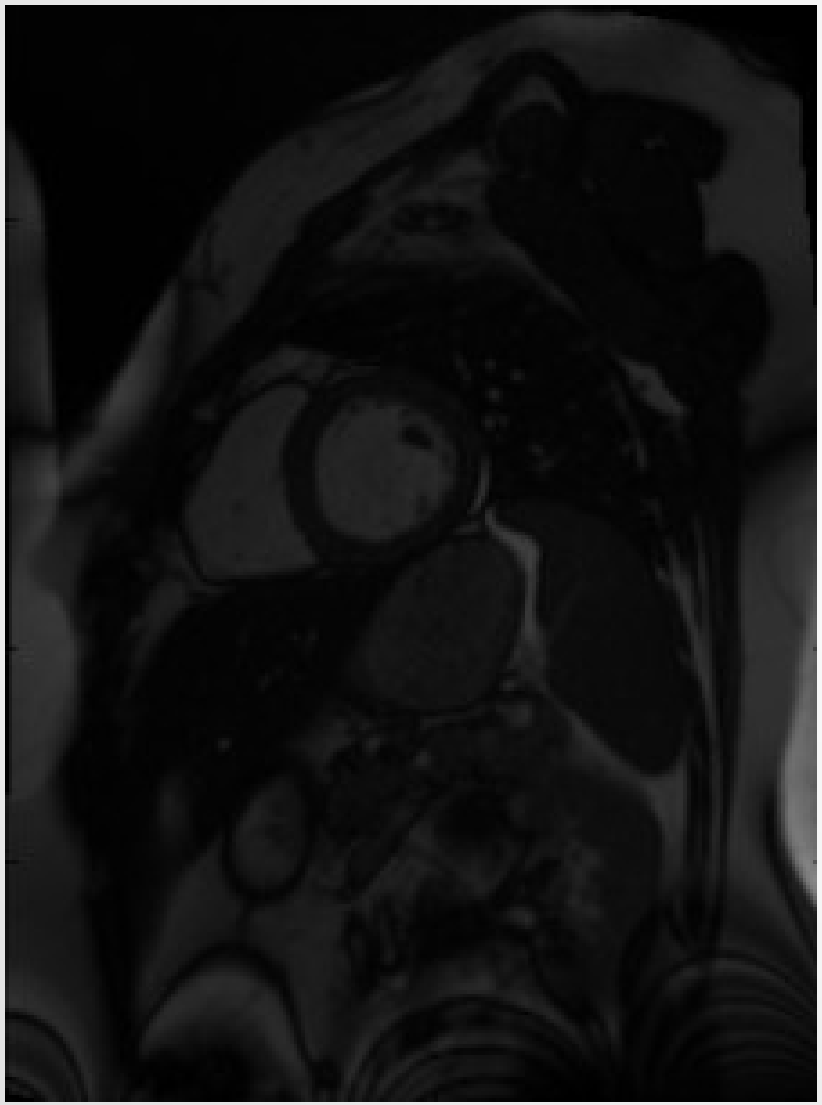
MRI Cardiac Segmentation for the Left Ventricle

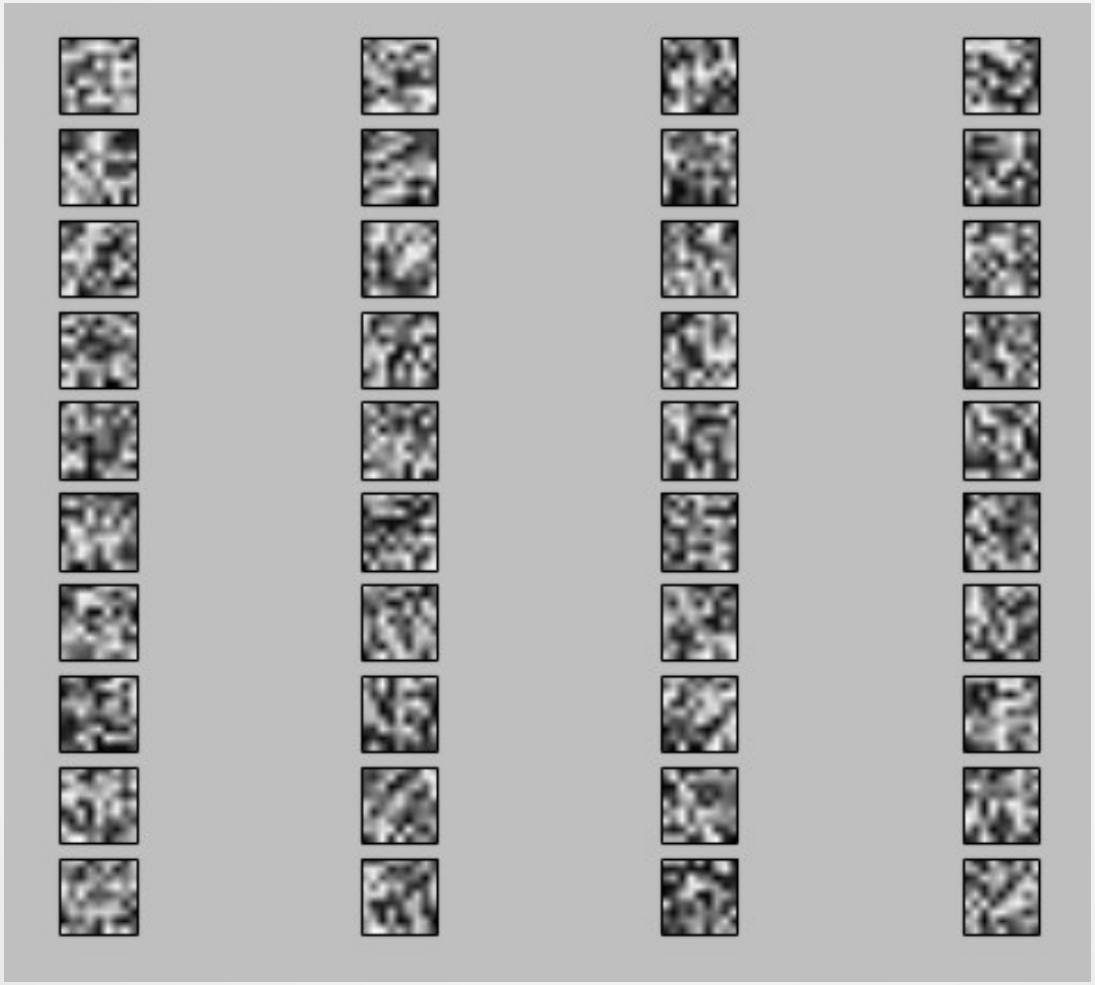


Jonathan Lacombe
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Working with:
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Week 6

Progress

- Further trained Autoencoders and visualized output
- Trained Mondrian Forests and output per-pixel prediction visualization on a sample patient
- Added 6 new Autoencoders with larger patch size
- Trained 6 more Mondrian Forest and visualized difference

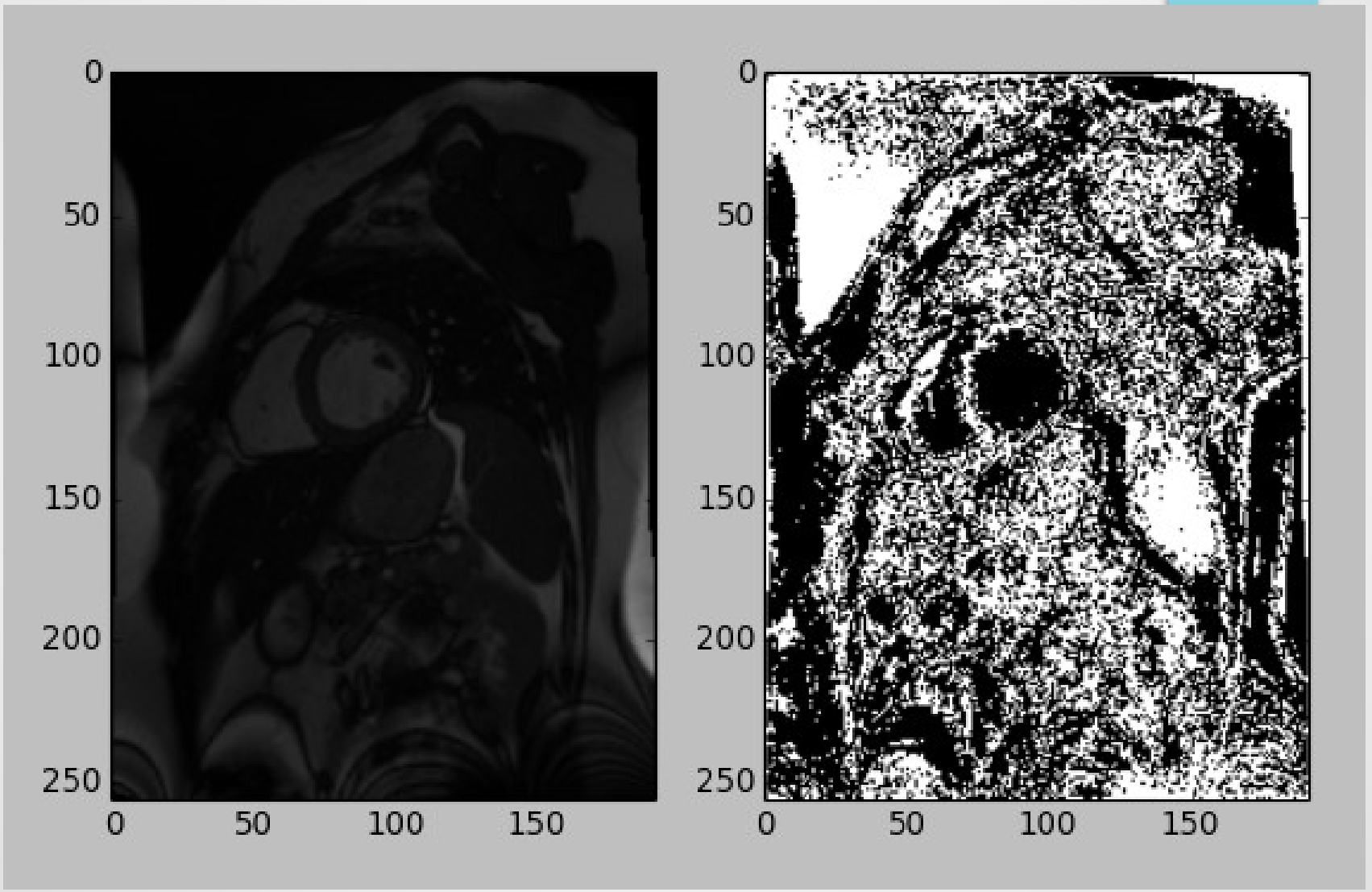
Visualized weights



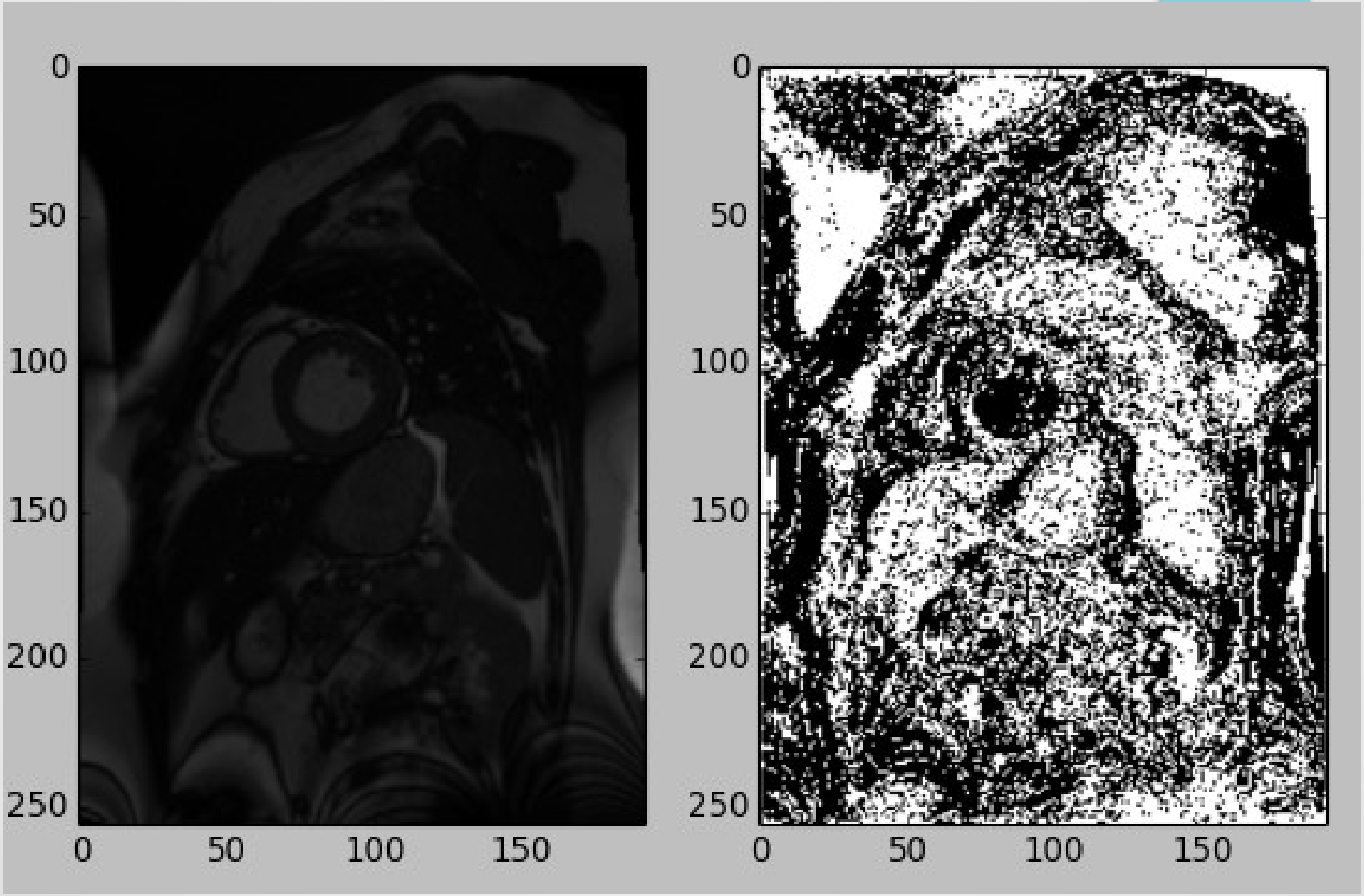
Mondrian Forest

- 6 Mondrian Forest for each patch type
- Each pixel in 4D test patient has a patch extracted
- Extract features from the patches
- Send the patches as test data in Mondrian Forest and calculate prediction
- Final pixel prediction = (xy + xs + xt + ys + yt + st) / 6
- Visualize prediction – if prediction > 0.5, show white else show black

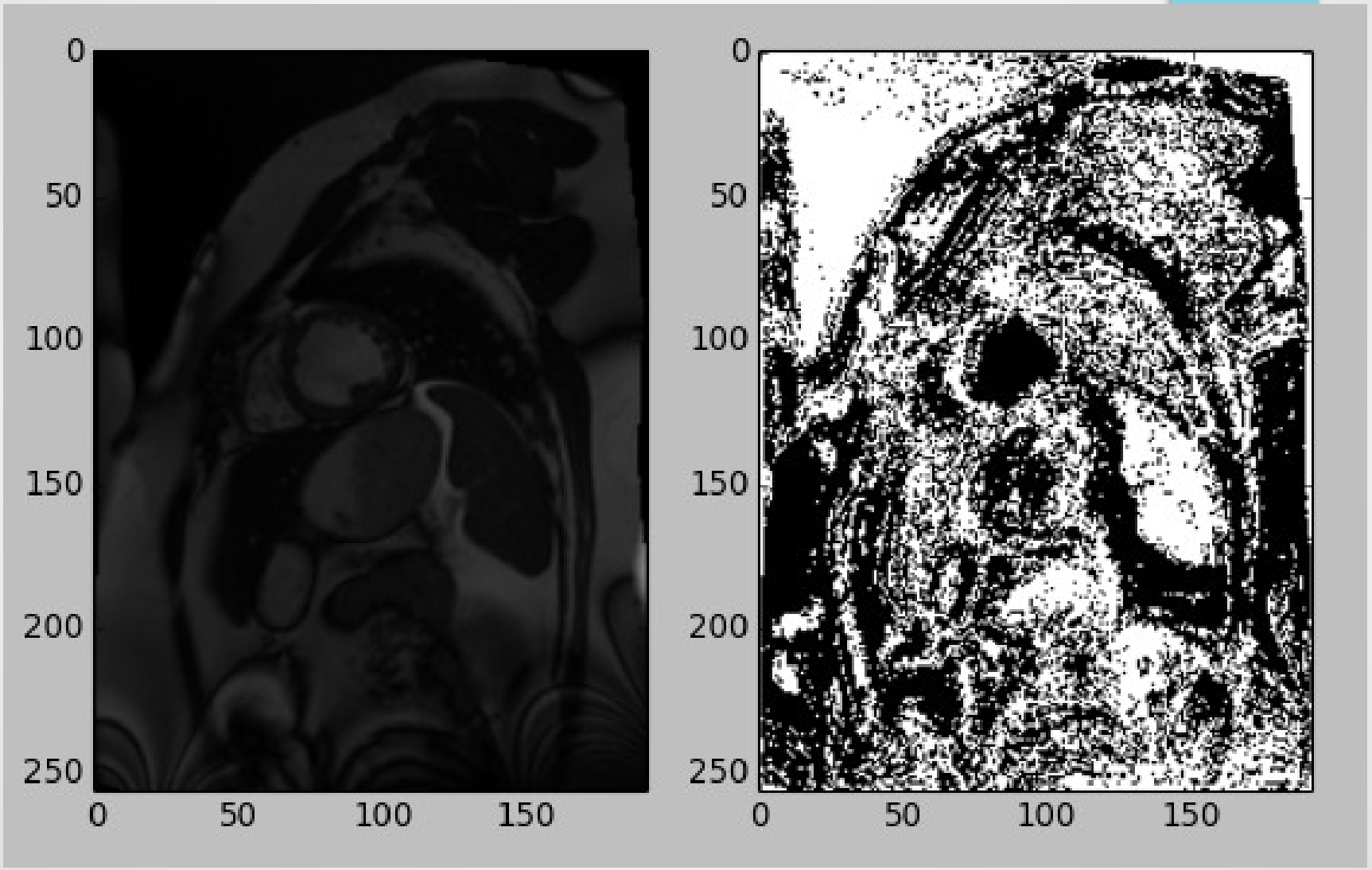
Results



Results



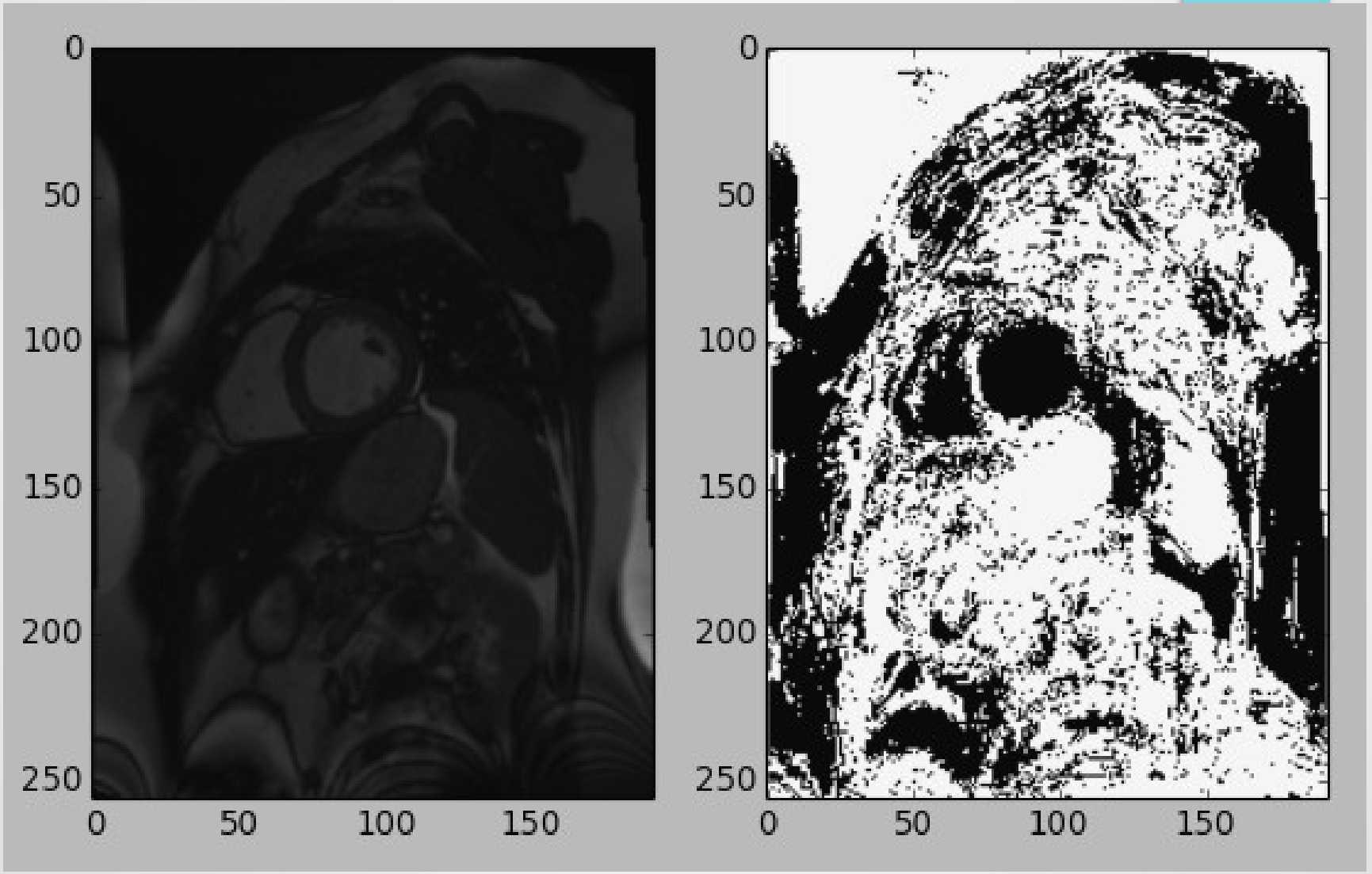
Results



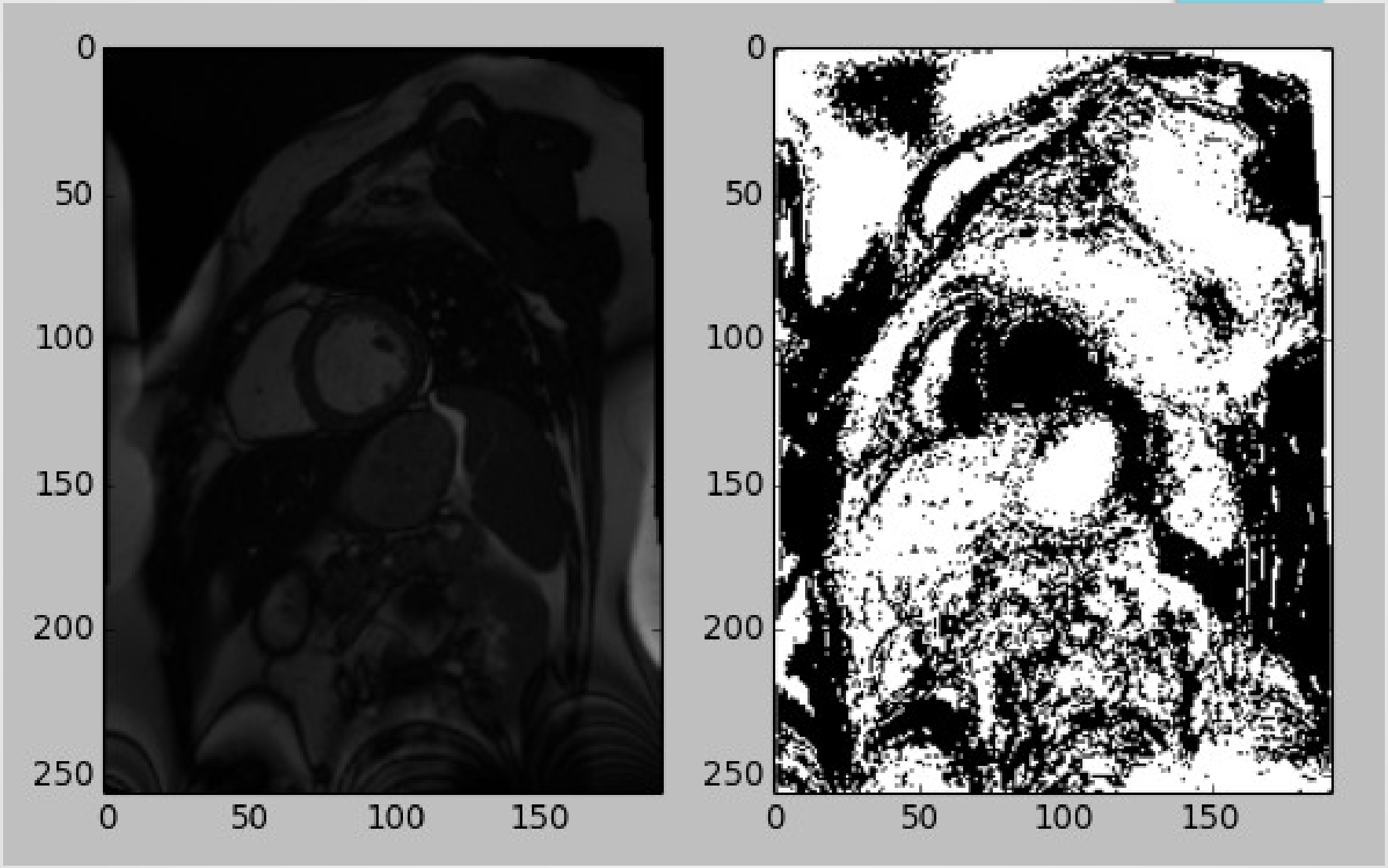
Adding 6 more Mondrian Forests

- Extracting features from larger patches
- Trained 6 more autoencoders and using 6 more Mondrian Forests
- Patch sizes:
  - XY: 25 x 25
  - XS: 25 x 7
  - XT: 25 x 7
  - YS: 25 x 7
  - YT: 25 x 7
  - ST: 7 x 7

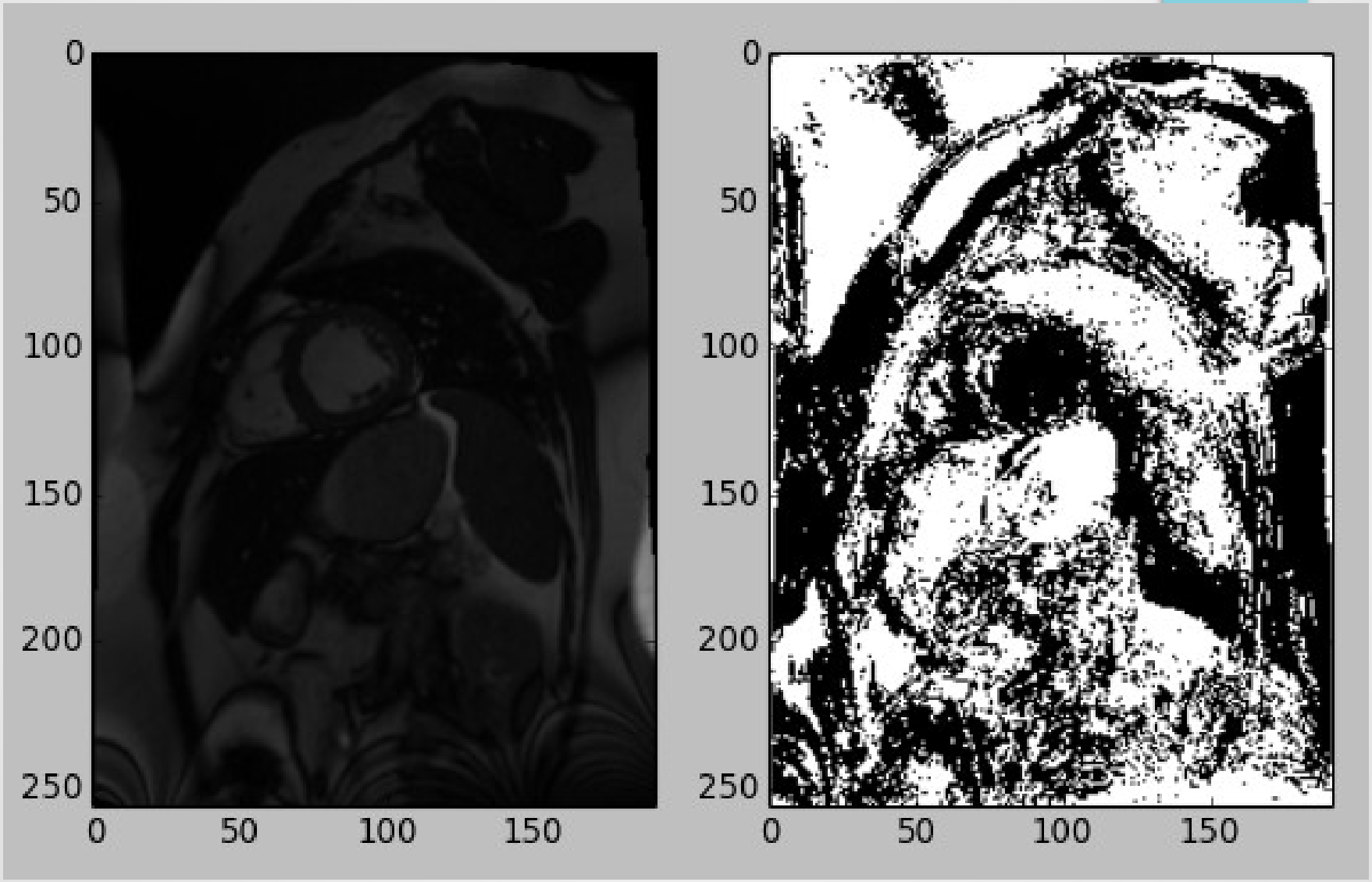
Results using larger patches



Results using larger patches



Results using larger patches



Plan for next week

- Research other possible features to include and minimize the error