MRI Cardiac Segmentation for the Left Ventricle

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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 = \( \frac{xy + xs + xt + ys + yt + st}{6} \)
• 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