rsfMRI Brain Network Classification
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Goals:
• Automate the classification of resting state fMRI brain network components

Significance:
• Allows for more precise pre-operative brain surgery and prognosis predictions

Results:
• Binary noise classifier for filtering
• Multi-class CNN for component prediction
• Pearson correlation hierarchy evaluation
Background

• Functional MRI
  – Measures brain activity by detecting blood flow
  – Resting state fMRI is used to explore the brain’s functional organization
    – Brain is organized by grouped network components
• Hierarchical network relationships
  – Variation in data clustering and underlying patient physiology make labelling difficult
  – Incorporating hierarchical data can help