

Your Name | March 2025



- **Dataset**



- **Classification Task**

- **Challenge**

- **Project Goals**





- **Dataset Organization**

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- **Preprocessing Pipeline**

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“ **Key Discovery:** Models heavily rely on color features for classification, which influenced our approach to feature extraction ”



CNN Model



ScatNet Model



```
graph TD
  A[Input Image] --> B[Feature Extraction]
```



Metric	CNN	ScatNet
Mean Accuracy	98.9%	87.0%
Mean F1 Score	98.9%	86.7%
Best Fold Accuracy	99.8%	92.6%
Training Speed	Faster	Slower
Classifier Complexity	Simple	Complex

Key Findings

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- **CNN Filters**

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- **ScatNet Filters**

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“**Important:** Color information proved crucial for classification success

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- **Attribution Methods Implementation**



- **Key Insights**





- **CNN Training Progression**



- **ScatNet Training Progression**





- **Performance Achievements**

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- **Key Insights**

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- **Future Work**

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