## Part II Project - Progress Presentation
### Techniques for Separation of Harmonic Sound Sources

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8th February 2017

# Project Background

Sound Separation is the inverse of mixing

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Examples:

- Cocktail Party Problem
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Examples:

- ▶ Cocktail Party Problem
- ▶ Unmixing music for analysis/sampling/remixing

Parameters:

- ▶ Uninformed
- ▶ Harmonic sources
- ▶ Known number of sounds

## Planned Work

Michaelmas:

- ▶ Research Sinusoidal Modelling techniques and Non-Negative Matrix Factorisation
- ▶ Obtain sample data and create test sets
- ▶ Design and draft high-level solutions using both techniques

Christmas:

- ▶ Complete main implementation of solutions

Lent:

- ▶ Optimise feature weights for clustering
- ▶ Obtain accuracy statistics over various test sets

Easter:

- ▶ Dissertation

## Current Progress

Michaelmas:

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- ▶ Optimise feature weights for clustering ✓
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# Example Results: Sinusoidal Modelling
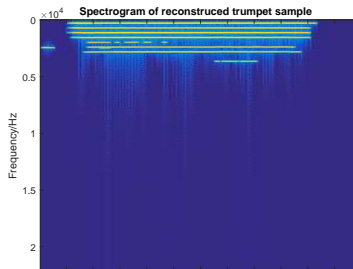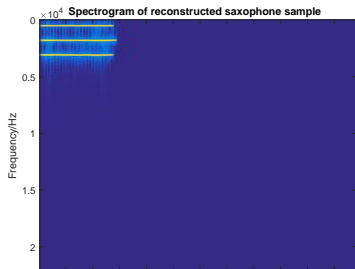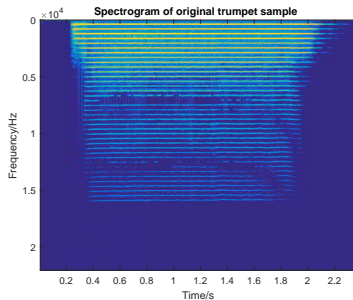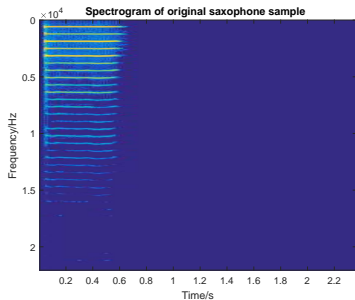
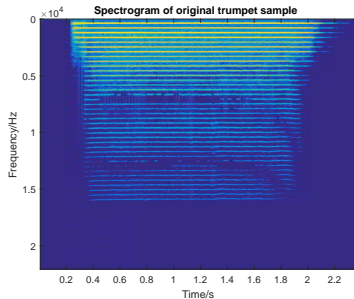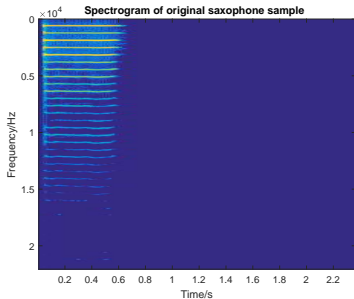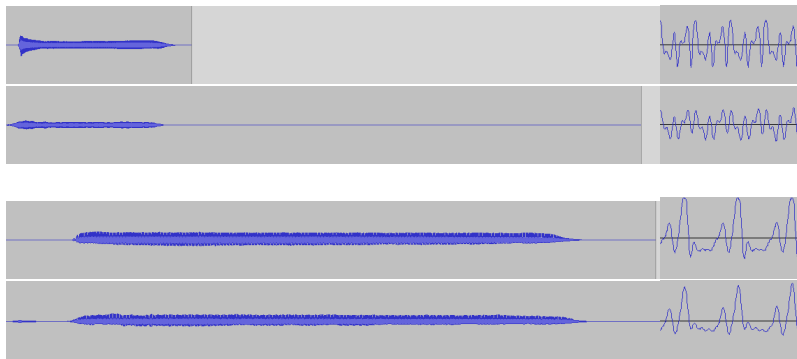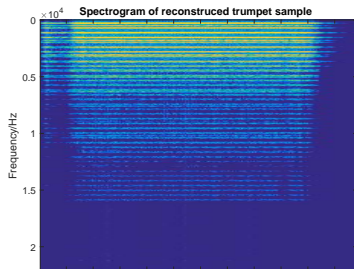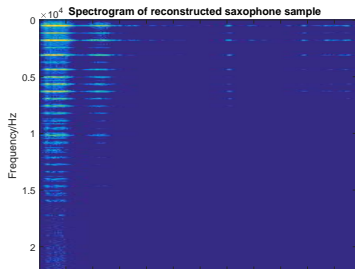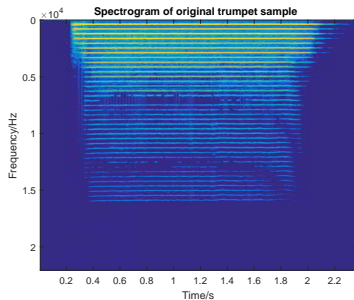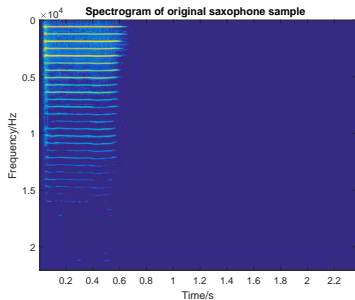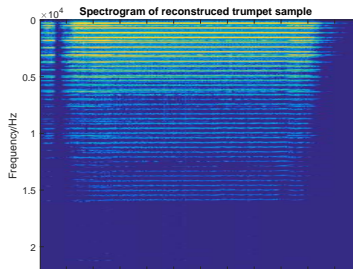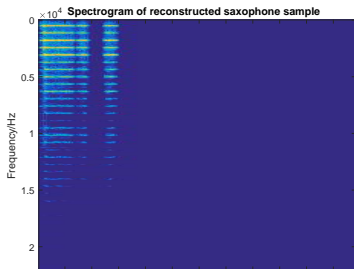# Example Results: Sinusoidal Modelling (cont.)
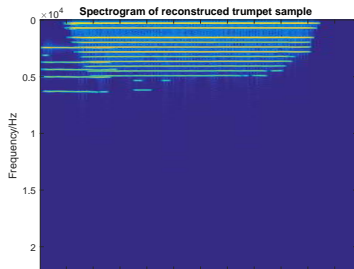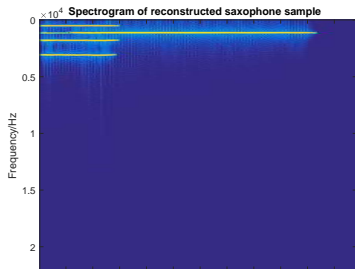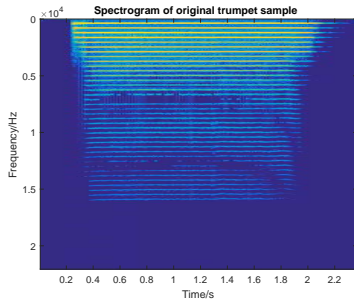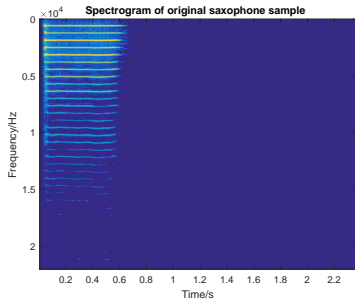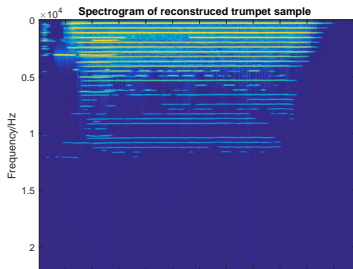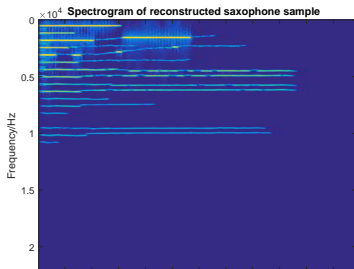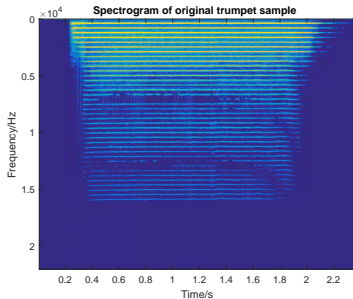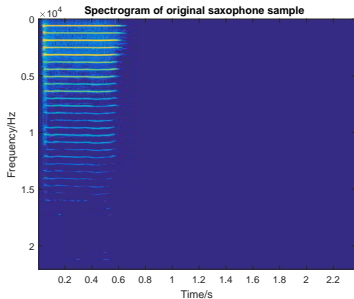
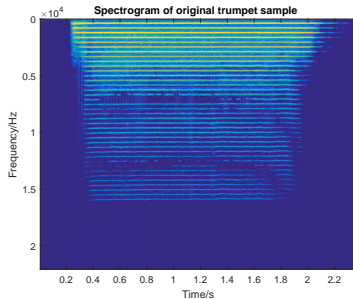# Example Results: Sinusoidal Modelling (cont.)
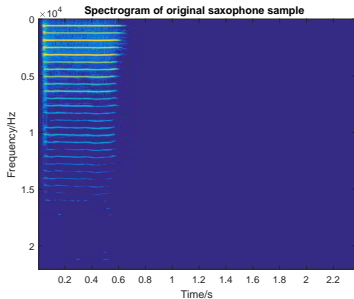
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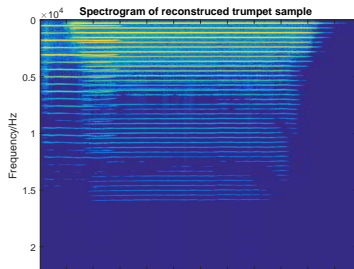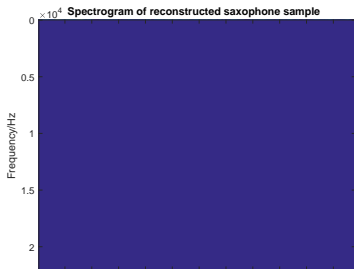
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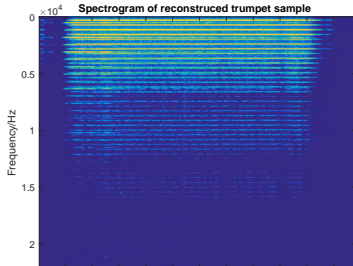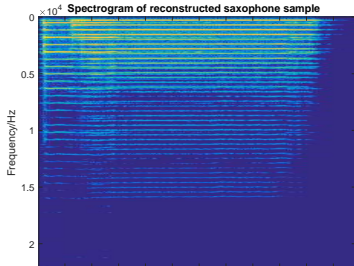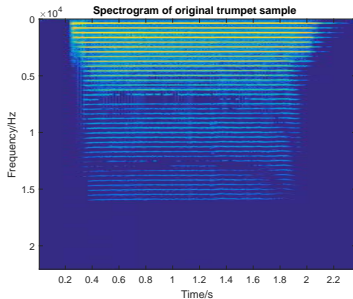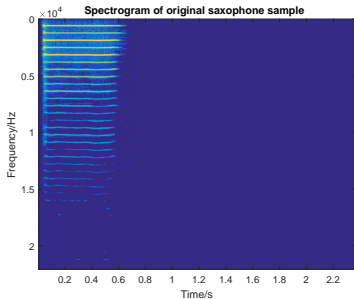
# Example Results: NMF

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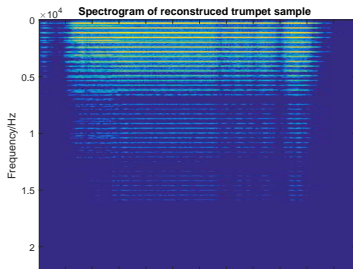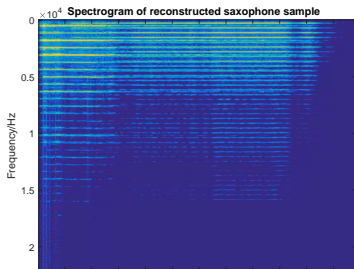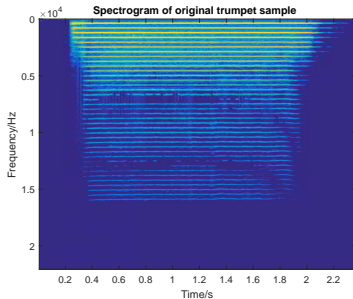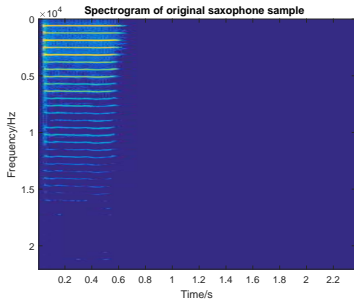
# Example Results: NMF (cont.)

## Remaining Plans

Obtain accuracy statistics over various test sets

Further experiments on current solutions

Extension: investigating another separation method

Dissertation

# Questions