

School of Computing

Year 4 Project Proposal Form

SECTION A

Project Title	Music Analysis Tool		
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Project Supervisor Name	Dr Donal Fitzpatrick		

General area covered by the project

My aim to build a music analysis tool that will take in a song, most likely in wav format, and return details on the song. It will tell me things like the mode, bpm, rhythm and melody. It will track the melodies and return them as a midi file or sheet music. It will use machine learning to try identify which instruments are in the song.

Outline of the proposed project

Background - where the ideas came from

I have always had an interest in music and I had been playing around with music production software over the summer. A good way to learn to learn this software is to try to recreate songs that you like, and I thought that a tool like this would help with that process.

Achievements - what functions it provides, who the users will be

It will provide information on a song. It will be helpful for people who want to learn more about a song and music theory.

Justification - why/when/where/how it will be useful

It will useful for collecting statistics on songs and it will be helpful for users who want to understand how to play or recreate a song.

Programming language(s)

Python 3

Programming tools / Tech stack

Jupyter Notebook for Research
Machine Learning Libraries

Learning Challenges -

- Scipy

- Numpy
- Machine Learning
- Audio Analysis
 - On set detection
 - Fast Fourier Transforms

Hardware / software platform

Computer Application