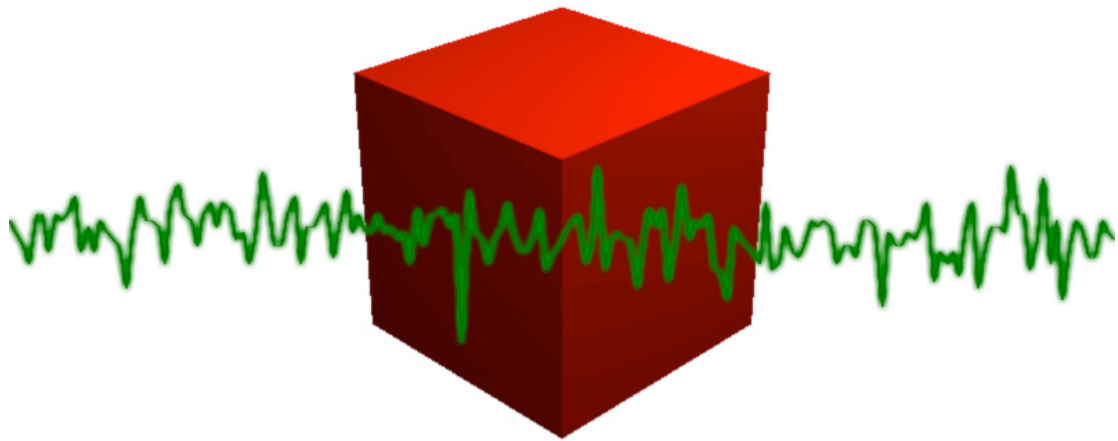


Music Visualisation Program

Project Report



Author	Nicholas Martin
Candidate Number	XXXX
Submission Year	2004
Degree Programme	BSc Multimedia & Digital Systems
Department	Informatics
Project Supervisor	Dr P. Newbury
Word Count	7565

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Summary

This project shows the development of an application which produces a graphical representation of sound. Implemented using Java and Java 3D, an object-orientated approach using detailed design diagrams. The application works using a live audio input. The frequency spectrum of the audio data is calculated using a Fast Fourier Transform, forming the source of control for each of the four visualisation themes. Graphical content is 3D and utilises mechanical equations for motion characteristics by implementing custom interpolator classes.

The graphical content and audio input correlate successfully, outputting between 90 and 210 frames per second with a latency figure of approximately 80ms. Issues were found within the Java 3D API when implementing advanced transparency.

The application confirms that Java is capable of carrying out an FFT in real time from a live audio input with minimal latency. Transparency with Java 3D is possible but its usage must be limited. Resource leaks may occur within the scenegraph if its elements are not manually removed.
