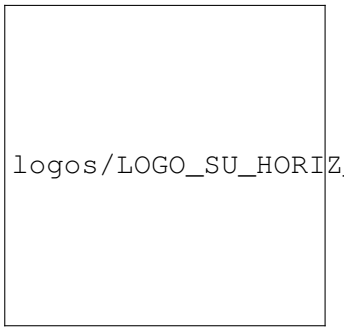

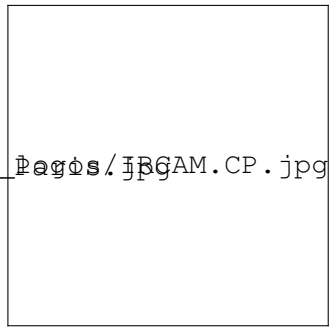

Internship Report
Written in August 2022

Automatic effect recognition and configuration for timbre reproduction

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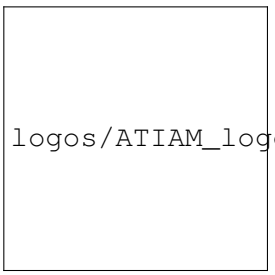
Key-words — audio effects, music information retrieval, differentiable signal processing, sound matching, computer music;

Mots-clés — effets audio, traitement de l'information musicale, traitement du signal différentiable, reproduction sonore, musique assistée par ordinateur.



Introduction

Natural language processing methods for the generation of symbolic music is a field of research that has seen great development in the last years. The transformer architecture, introduced by Vaswani and al. in 2017, has been used to generate scores for various instruments, in diverse styles and genres**vaswaniAttentionAllYou2023**, **leNaturalLanguageProcessing2024**. However, adapting the transformer architecture - originally applied on text - to symbolic music presents many challenges. Tokenization has to be adapted, data is much less available, and attention has to be tailored to the context**leNaturalLanguageProcessing2024**.

In this project, we focus on the conditional aspect of symbolic music generation, for an instrument that has not been thoroughly studied yet: the bass guitar. More precisely, we aim to generate bass guitar tablatures given other instruments' scores. Our goal will be to try several combinations of instruments and to evaluate the quality of the generated tablatures.

Tablatures are a way to represent music for string instruments. They contain information about the fingering to use to play the notes and the rhythm.