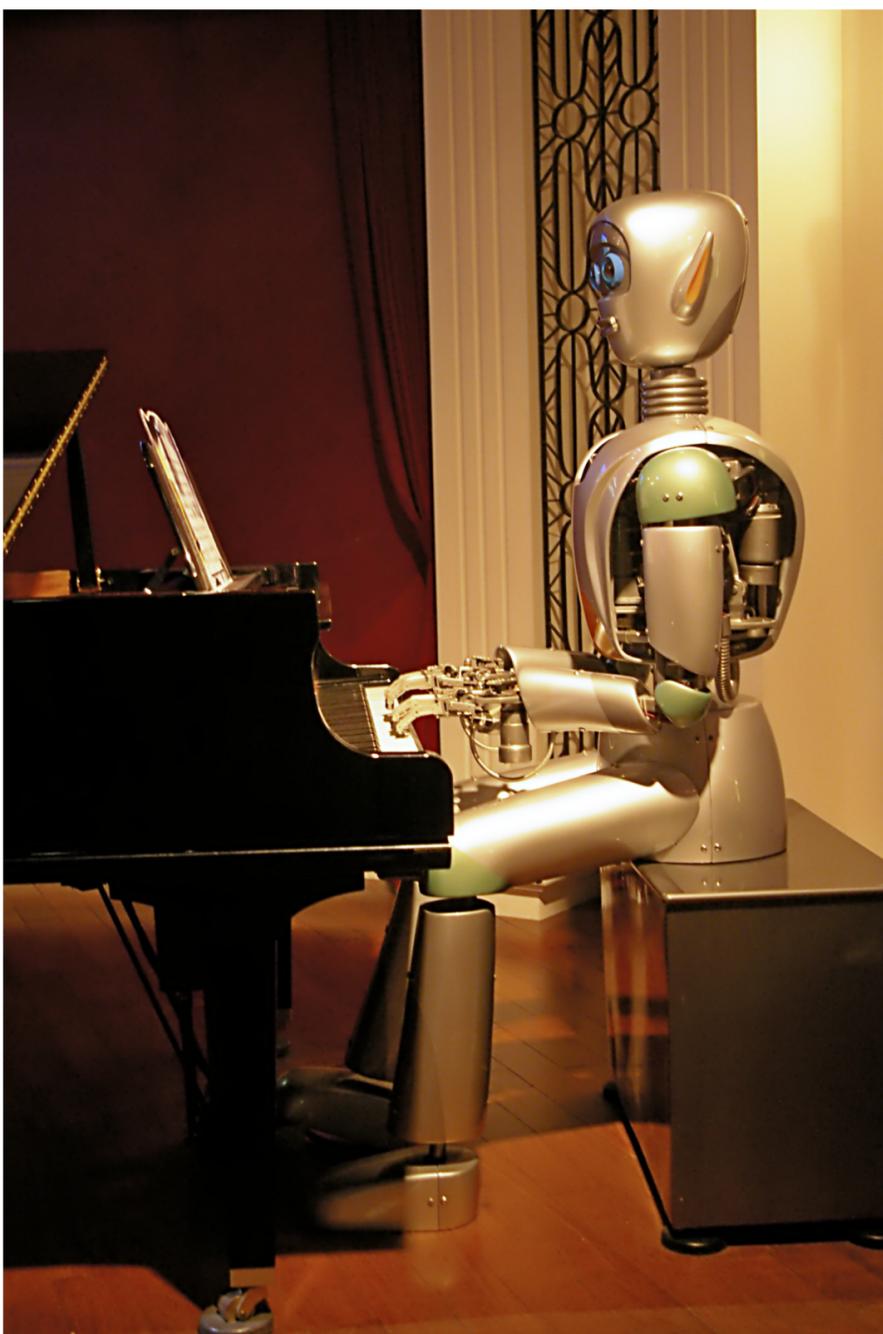

Play On: Algorithmic Improvisational Music Generation

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My thesis comprises three main components: a computer program which can, in combination with live human input, improvise music; a live demonstration of this capability; and a written narrative and explanation of the project and its architecture. The end goal is to produce a program that I can collaborate with to create improvised piano duets.



The program will be given its own musical style, subject to change and improvement as it plays and receives feedback from its partner. Part of the challenge of this thesis, then, will be codifying said style into various traits that can be recreated in algorithmic form.

The program will receive a stream of musical input in real time, from an attached keyboard or other MIDI device, and process it in small chunks. From these chunks, the program will determine the tempo and key the player is improvising in, and from there, based on the input, improvise a piano part that meshes with its partner's.

The program will likely be coded in C++, a language which I know well and is certainly capable of handling a task of this magnitude. As there are several components (e.g. analysis, composition, input, output) which need to work together to produce the final product, the program's architecture will be modular, to make alternate processes viable: for example, during a live performance, the program might use a sound-based output module to play the piece as it stands, but when improvising in the studio, it might also save the music in MIDI form, for future reference. The program will most likely not have a graphical user interface; my feeling is that, while a GUI would make things more convenient, it would further constrain the program to a single platform, and is an unnecessary addition to the project scope.
