Live Coding with the Cloud and a Virtual Agent

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SUMMARY

We present directions for designing a customisable virtual companion to help live coders in their practice. In particular, we introduce a machine learning (ML) model that, based on a set of examples provided by the live coder, filters the crowdsourced sounds retrieved from the Freesound online database at performance time.

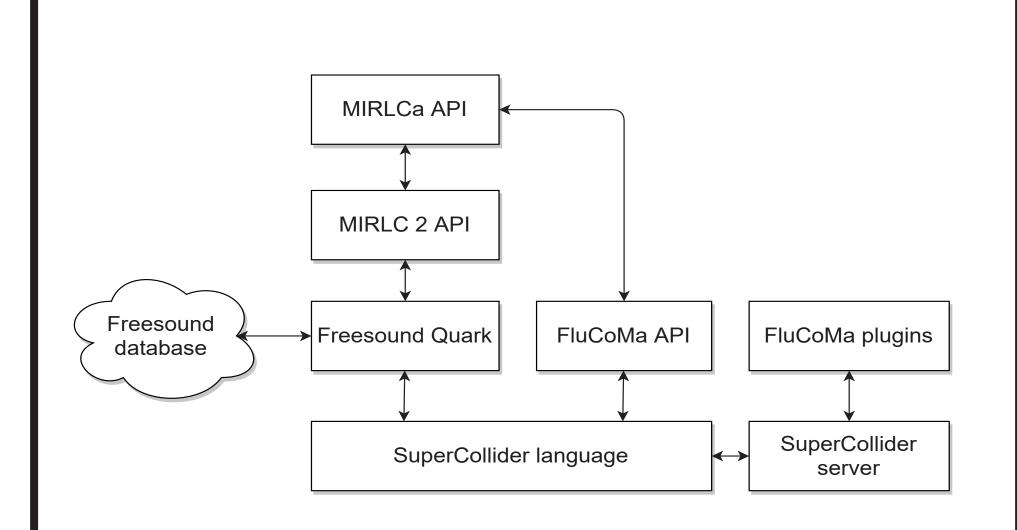
EXAMPLE MODEL

Objective: Accuracies in the range of 76%-83%.

Subjective: Better performance at discriminating

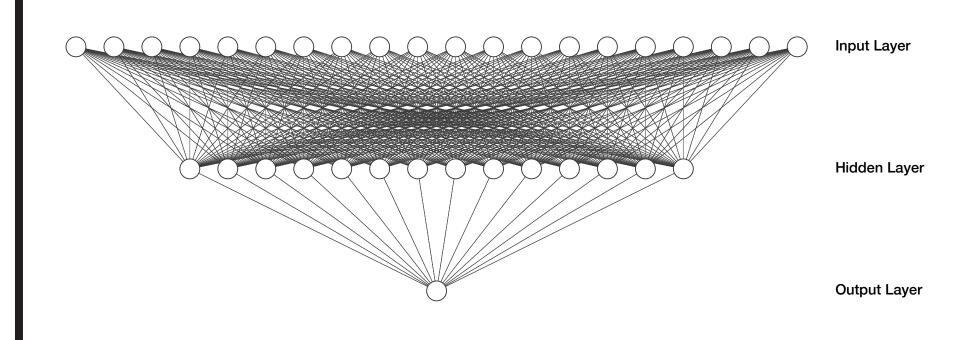
between "good" and "bad" sounds.

SYSTEM ARCHITECTURE



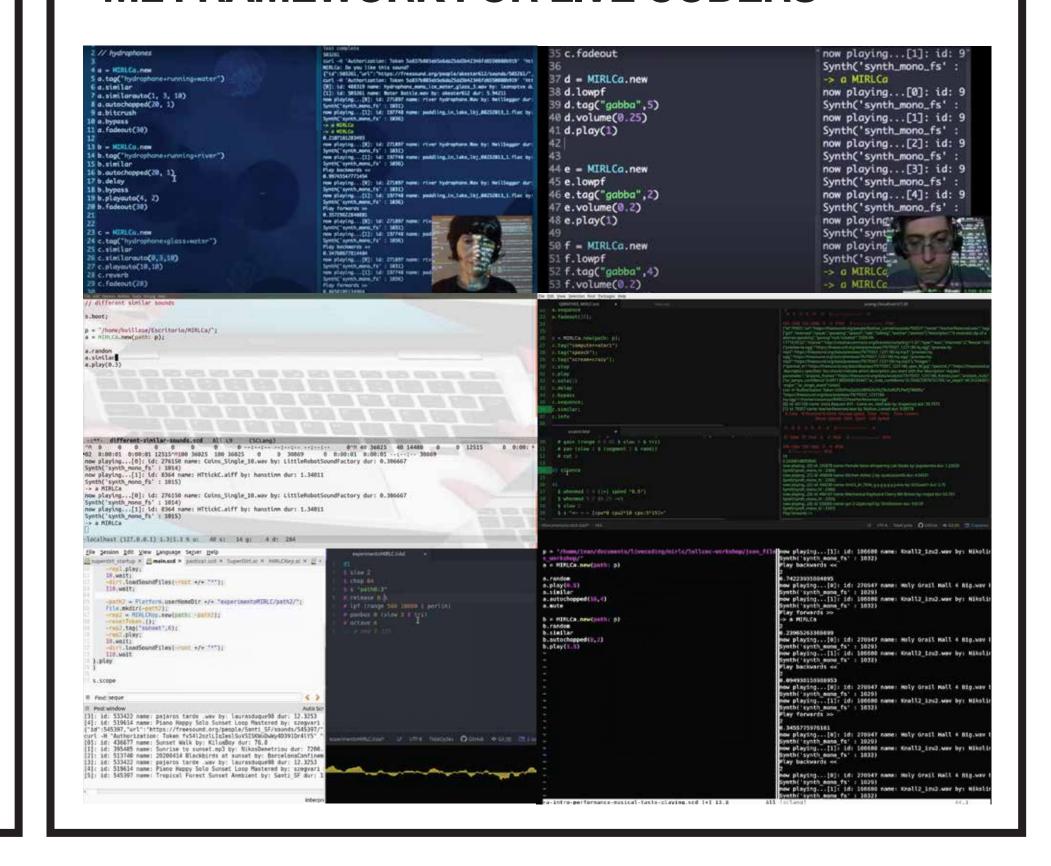
The system leverages several technologies using the SuperCollider language.

NEURAL NETWORK ARCHITECTURE



Architecture of the multilayer perceptron (MLP) neural network for the binary classifier of situated musical actions. The classifier takes MFCCs as input. The classifier filters sounds predicted as "good" from the search results.

ML FRAMEWORK FOR LIVE CODERS



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