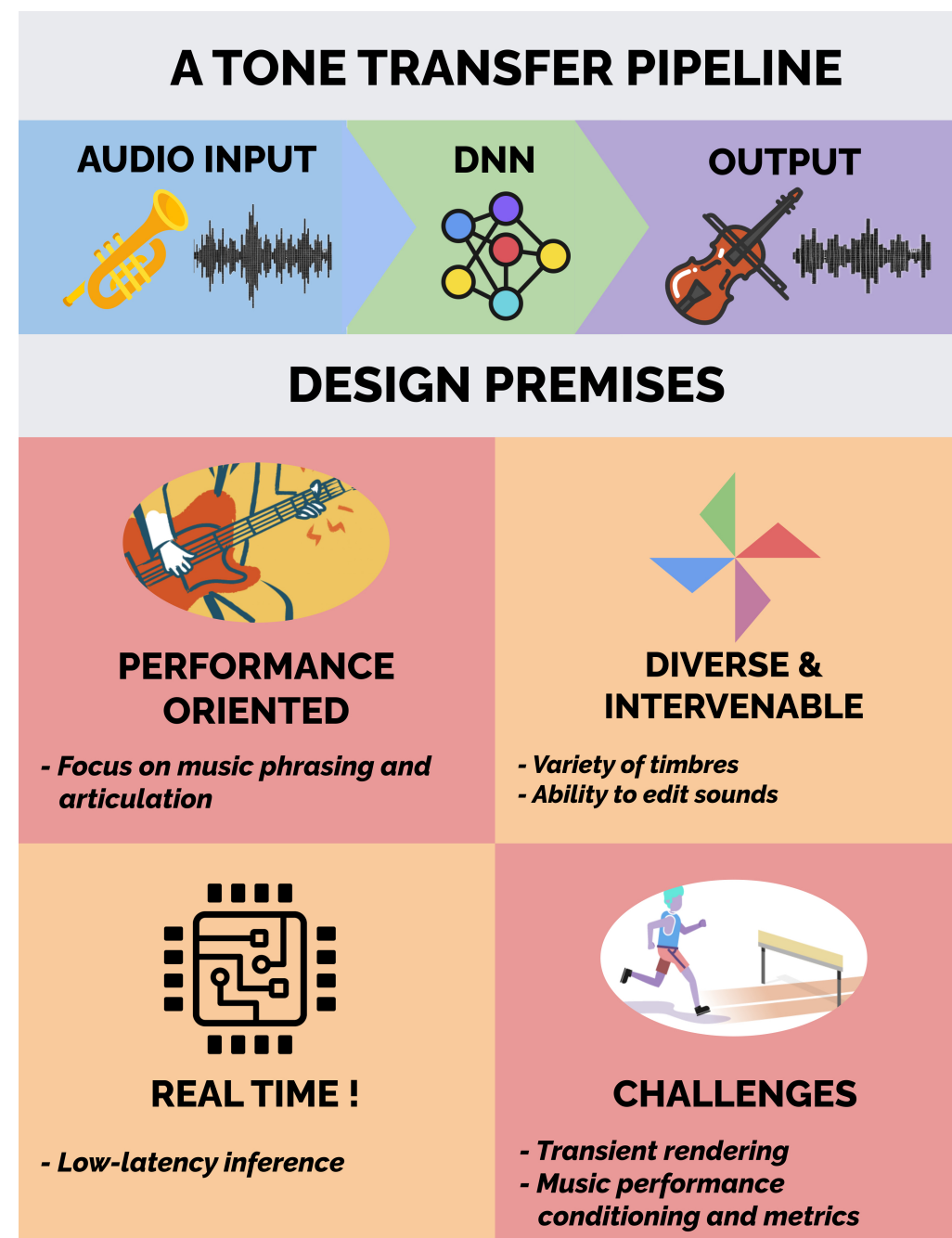


Interpretable and Expressive Tone Transfer Algorithms

Franco Caspe

2021



Finding

Can we expose synthesis controls in neural synthesis algorithms that are familiar to sound designers? Yes. We designed an approach for differentiable FM synthesis where a DNN learns to control the envelopes of a compact set of FM oscillators. Now are working on a second approach that leverages the vast amount of FM patches and employs them for Tone Transfer.

Question

How can we improve the musical phrasing capabilities of Tone Transfer algorithms? We may approach this from different angles, analyzing how to disentangle performance from musical form and timbral identity, how to improve audio rendering including transient information in the learning objective, and developing a strategy to quantify phrasing diversity.

Supervisor(s): Andrew McPherson, Mark Sandler