Randomized overdrive neural networks

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Abstract

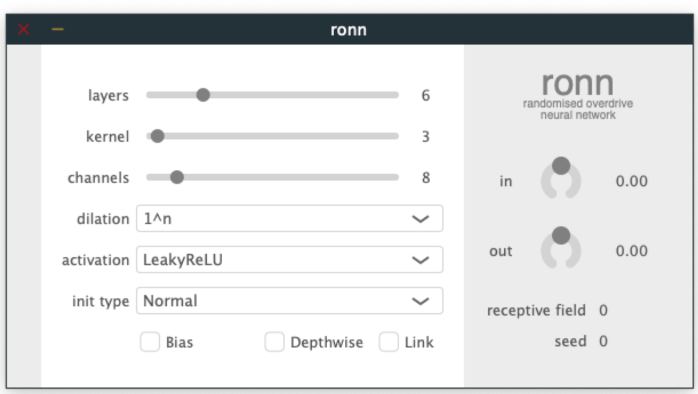
1 Introduction

Throughout the history of audio technology, engineers, circuit designers, and guitarists have searched for novel sonic effects as a result of clipping or distorting audio signals. These distortion effects were first discovered by pushing early guitar amplifiers beyond their operating range, or in some cases even from the accidental damage amplifiers or speakers [7]. These pursuits are a clear example of creators taking advantage of the limitations of their tools for creative effect.

Today, distortion effects have permeated most genres like blues, jazz, rock, metal, and these effects also play a central roll in modern pop and hip-hop styles. Whether it be vacuum tubes, diodes, transistors, op-amps, integrated circuits, or broken speaker drivers performing the distortion, it appears as if nearly all the methods of generating this sought after effect have been exhausted. But maybe there is a relatively under-explored in the task of generating distortion, and thats the realm of neural networks.

Neural networks are far from new, and in fact they came into existence in the same era that blues guitarists began their experiments with distortion [5]. Now with the emergence of modern deep learning approaches, these methods have already applied to the task of trying to mimic the characteristic distortion of famous amplifiers and distortion effects [1, 6, 8, 2, 4]. The aim of this work deviates from these modeling approaches, and very much in the spirit of the original distortion pioneers, our work aims to take advantage of neural networks in a way that departs from their intended design, .

[3]



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2 Method

3 Discussion

Broader Impact

References

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