UiO : RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion
University of Oslo

Towards Sound Innovation Engines Using Pattern-Producing Networks and Audio Graphs

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Diversity promoting algorithms can bridge a technological gap between the theoretical realisation and practical accessibility of sounds.

Innovation Engine-inspired system for generative sound synthesis.

A combination of Compositional Pattern Producing Networks (CPPN) and Digital Signal Processing (DSP) graphs, coupled with Multi-dimensional Archive of Phenotypic Elites (MAP-Elites) and a deep learning classifier can generate a substantial variety of synthetic sounds.

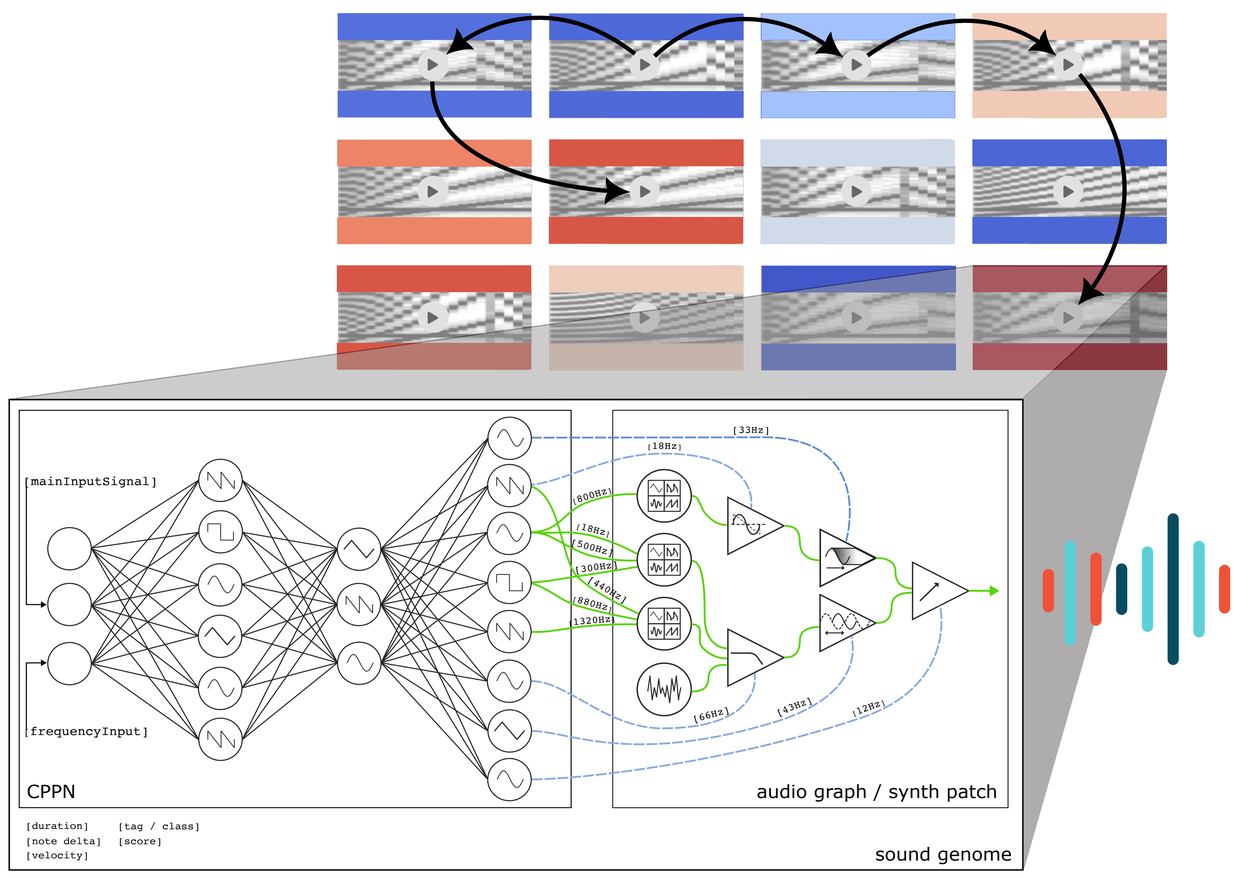
Online explorer and rendered sound files offer access to generated artifacts.

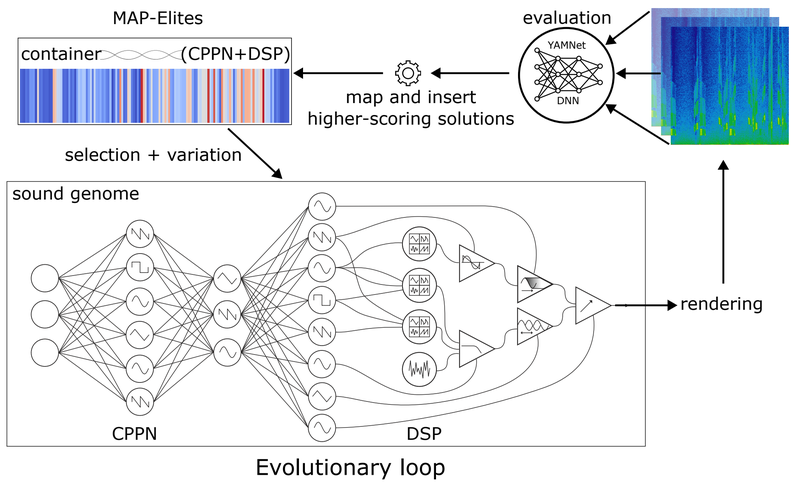
Evolutionary sequences through subsets of generated artifacts demonstrate the applicability of the discovered artefacts for creating other art.

Summary, paper, sounds, dataset, code

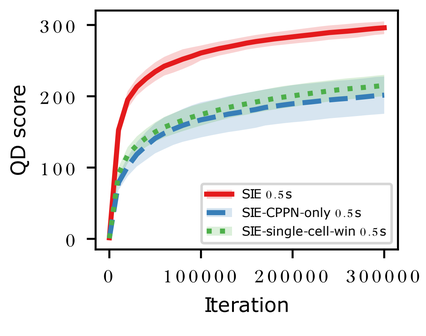
More sounds than you can ask for

when you don't know what you're looking for,
so you can't prompt for it

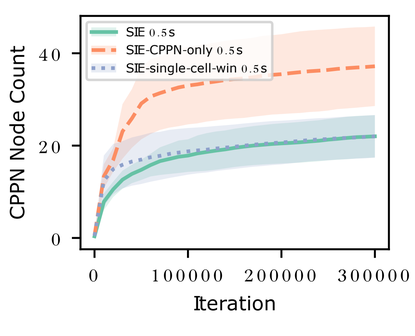




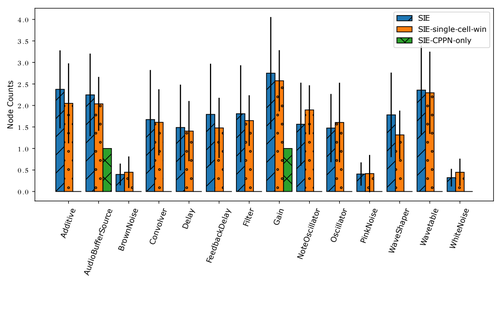
Evolutionary loop



Performance



Complexity



Composition