Composer's Assistant: An Interactive Transformer for Multi-Track MIDI Infilling

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Abstract: We introduce Composer's Assistant, which is an AI-backed system for interactive human-computer composition in the REAPER digital audio workstation. The heart of Composer's Assistant is a transformer neural network trained to solve the problem of multi-track MIDI infilling in the scenario where arbitrary track-measures have been deleted from a slice of measures from a MIDI file. Our complete system, consisting of source code, pretrained models, and REAPER scripts, is freely available for download. Our models were trained only on copyright-free or otherwise permissively licensed MIDI files. Since its release in April 2023, Composer's Assistant has had an international impact, including its adoption by composers Mantautas Krukauskas and Māris Kupčs to help restore the 15th century opera Andromeda. This opera was originally composed by Virgilio Puccitelli, but its original music has been lost to time, with only the libretto surviving to the present day. The restored opera premiered in Vilnius, Lithuania, in September 2023.