

Formal Music Night Presentation:
a (Permuted(Key, Note, Talk)) by

Sageev Oore and Dani Oore

**Disconnecting and Reconnecting
Music and Math**



In this presentation, we will push & pull on some expected and unexpected connections between math and music. We will play & talk about classical and non-classical music and music generation, including non-classical approaches to classical music. We'll look at and listen to how language models (LM) generate musical material, and I hope we will have fun together with few interactive exercises to explore and enjoy basic questions about math and music.

[Sageev Oore](#) is a faculty member in Computer Science at Dalhousie University, a Research Faculty Member at the [Vector Institute for Artificial Intelligence](#) (Toronto), and a [Canada CIFAR AI Chair](#). He is interested in basic research in machine learning and deep learning, with special interest in audio, music, computational creativity, and health. From 2016–2018 he was a Visiting Scientist in Google Brain (California), where he worked on the Magenta team developing generative music systems. As a pianist he has performed with orchestras both as a classical soloist and as an improviser. Sageev studied piano performance with music teachers from Dalhousie, Juilliard, and UBC. He completed his undergraduate degree in Mathematics (Dalhousie), and MSc and PhD degrees in Computer Science (University of Toronto) working with Geoffrey Hinton.

[daniel oore](#) is sought as a musician, composer, improviser, actor, dancer, choreographer, teacher, and scholar, working across North America, Europe, Australia, and beyond. dani's [creating](#) includes invented instruments, and acoustic, electronic, orchestral, chamber, multimedia, interdisciplinary, and cross-cultural elements and collaborations. daniel's [scholarship](#) is published and presented in music, culture, and science venues. their [teaching](#) includes visiting professorships, guest artist-scholar and faculty appointments in sonic activism, digital music, music video/ sound studies, genocide studies, improvisation, saxophone, composition, performance, and music education. they continue to lead and co/facilitate diverse community-building arts projects striving to connect and lift at-risk voices.

Artwork, above left, is by S Oore. Artwork, above right, is based on images at <https://playground.tensorflow.org/>

Artwork, above centre, is by S Oore and D Oore.

The above artwork is not to be used for training neural networks, or otherwise, without permission.