

IEEE Computer Society Distinguished Lecture

Friday, Oct. 20

1 p.m.

3043 ECpE Building Addition



Michelle Thompson: W5NYV

Representation Matters

ABSTRACT: Do you play an instrument? Do you have one gathering dust in a closet? Bring it! We'll talk about specific instruments and the impact on algorithmic music design. I'll bring a live exercise for us to try at the end of the talk.

The history of musical notation and composition is deeply embedded in embodied human performance. The translation from composer's intent

to audience perception is long and fraught with peril. Algorithmic musical composition (Computer Aided Composition) techniques provide powerful tools for composition, critique, and appreciation. These techniques are successful. Machine learning algorithms deliver music suggestions based on what a listener has previously liked. Markov chains and recurrent neural networks grapple with and quite often succeed at delivering coherent musical ideas. Field theory and information theory contribute tools and techniques that reveal structure and allow for evaluation, comparison, prediction, and control. But there are pitfalls, biases, and limitations everywhere we look! Music composition is a landscape awash in opportunity and we are only beginning to get some traction.

BIO: Michelle Thompson W5NYV enjoys thinking and doing. Not necessary in that order. MSEE Information Theory from USC. Long-time DEFCON, Burning Man, and amateur radio participant. Vice Chair San Diego IEEE Information Theory Society Chapter. Lead for AMSAT Phase 4 Ground. Director of Organ Donor, an artificially intelligent pipe organ project. Lives in San Diego, CA and can be found as @abraxas3d on social media and at w5nyv@arrl.net.

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