ICLC2020
International Conference on Live Coding

FRI 7th 2020
University of Limerick - Ireland

Lunch Concerts

Friday 7th of February 2020
13:00-14:00
Cafe Aroma - University Concert Hall

Maths That Wiggle Air

Dimitris Kyriakoudis (w1n5t0n)

Independent, lnfinite Monkeys

Music is made of sound that changes over time. Sound is made of waves that wiggle air particles over time. Those waves in turn can be made of other waves, that change over time too. Mathematical functions, in particular some of the simplest algebra taught in schools, turn out to be particularly well-suited for looping, twisting, and bending the flow of time to create and compose those waves.This performance uses such mathematics to improvise a choreography of air particles. The instrument of that improvisation is Time Lines, a functional reactive language embedded in Haskell, used to control the parameters of both hardware and software modular synthesizers using numerical functions of time. Time Lines itself doesn't synthesize the sound, it just repeatedly asks the question: 'If the musical time right now is t, in seconds,then what value should each parameter of every sound process have?'. By

building upon multiple different layers of abstraction, the performer constructs a series of equations that, in parallel, shape the linear flow of time into each answer for every moment in time.The resulting waves are then indexed through at a 1:1 rate and sent to various modular synthesis and effects processes, which live in SuperCollider and hardware analog circuits.

Bio

Dimitris Kyriakoudis, occasionally known as w1n5t0n, is a researcher,musician, and computational artist among the lnfinite Monkeys. He studied music at a young age by reading and writing black squiggles on pieces of white paper, playing them using an array of even more discrete, but equally black and white, on-off switches. That turned out to be a bit too limiting, so now he can be found looking up obscure error messages and making funny noises us-ing functional programming and mathematics he can barely understand. He develops TimeLines, a live coding modular synthesizer and sequencer based on mathematics and FRP, and is obsessed with keyboard technique and code editing ergonomics.