A Tribute to David Wessel (1942-2014)[1]
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Our community has lost one of its most inspirational members. David Wessel, born in 1942, passed away on October 13, 2014 at his office in the Center for New Music and Audio Technologies at UC Berkeley. He was a major figure in the fields of computer music and music psychology and was one of IRCAM•s pioneers in the late 1970s and the 1980s. David studied mathematics and experimental psychol-

year before by composer Richard Felciano, who had been inspired by his interactions with David at IRCAM. Felciano took the initiative (and the risk) of proposing the move to California. Wessel realized immediately that a somewhat ••non-institutional•• environment would better suit his ways and the community he envisioned building in California. CNMAT is situated at 1750 Arch Street, near the Berkeley campus. It was already a famous locale for new music recordings and salon-style concerts in the upper Bay Area, originally owned and operated by the baritone singer Thomas Buckner, a good friend.

There was an elevated irony in the process. After luring David away from the institutional certainties of IRCAM to the vagaries of the Berkeley Music Department (traditionally oriented towards musicological ideals, not those which motivated him), Felciano left the Department just as Wessel arrived, leaving him in a complex and also traditionally oriented departmental environment without cover. David had to„and of course eventually did„win over his colleagues to an understanding of his purposes. And in time he found there a fellow searcher in composer Edmund Campion who became co-director of CNMAT.

David was particularly interested in live-performance computer music in which improvisation plays an essential role. He collaborated in performance with a remarkably varied list of improvising composers including Thomas Buckner, Steve Coleman, Vinko Globokar, Vijay Iyer, Shafqat Ali Khan, Jin Hi Kim, George Lewis, Roscoe Mitchell, Pauline Oliveros, Laetitia Sonami, and Ushio Torikai, among others. He performed throughout Europe, North America and Asia with interfaces and strategies of his own design or adaptation.

Uncommonly open-minded and generous with his knowledge of the latest scientific and technological advances, he opened up innovative paths in a variety of domains throughout his career. His early work on timbre and sound synthesis resulted in a seminal chapter co-written with composer/researcher Jean-Claude Risset in the first two editions of The Psychology of Music, edited by Diana Deutsch. His interest in computer-aided improvisation led to work on real-time interaction with high-level control structures piloted by human gestures and

pitch and the loudness, to start with... So what we can do now is to apply this machine learning idea to, maybe, develop the instrument model.

. . . the machine learning approach that we took in this particular problem was to use a neural network, although there are other options that would also be very interesting. . . I•m going to avoid talking about the technical details here...

To make things simple... here we want to use something that•s psychological, not just amplitude, but a meaningful measure of loudness. So we have a loudness model that we apply to the analysis data. . .

You can think of this as something that learns about the interrelationships between all of these features by trial and error … in a way, there•s a teacher involved that•s telling it what the output should be and there•s a measure about how [well] the output fits the real data and there•s a method to adjust the parameters of the model so that the fit to the real data is better and better... in fact you can think of this as a kind of elaborate curve-fitting problem with lots and lots of input curves, but once we•re finished with this process, we can throw the original sound material away, we can throw the analysis data away, and what we•ve got left is this network that should generate the good quality that we•re looking for at the output... . . Now I want to say something here. I always have to make this apology. We•re simulating real instruments here, but it doesn•t take very much of a stretch in the imagination to see how we can use this to do timbral interpolations and to make new kinds of sound material. And I just want to say that we•re not obsessed with making fake saxophones and fake flutes. . . our goal is to test whether these ideas are reasonable.••