



# Expanding “The Experience” with Code

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## **Abstract.**

Be it with a computer and interface alongside or through coding straight into a module containing a "little computer", it seems like there is a new paradigm of hybridity being established in the outskirts of modular synthesis culture. This patchbay session will focus on this "singularity" of computer programming and voltage controlled electronics, demonstrating processes in which computer programming self-suggests a logical step forward for the ones who seek more complexity and procedural personalization."

**Keywords:** Computer programming, analog synthesizer, modular synthesizer.

The so-called renaissance of modular synthesizers has undoubtedly generated a small revolution in the procedural habits of electronic musicians, who have not resisted the attraction and fabulous promise of modular synthesizers. Changing them intellectually and consequently the nature, culture and business of electronic music, both consciously and by accident, both clearly for the better and sometimes for..., well, questionable directions and trends. Nevertheless this phenomenon raises interesting questions not only within but also out of its “ecosystem”.

Part of this renaissance has also and surely a link to certain frustrations of many with the on-going state of music making with a computer/midi based setup. It seems like many got simply tired of old habits like a rather slower pace of working towards a creative objective with just a mouse and some computer keyboard shortcuts, playing with tonal music oriented “lo fi” midi controllers and slaved to the constrains of DAW architectures that don’t seem to be evolving like most of us have hoped over the years. While those ideas would not be the only reasons modular synthesizers are back so strongly, it’s clear they stack up to the already classic (and boring) discussion of digital versus analog.

While the question of why focusing on the more physical, ludic and more intuitively workflow of modular synthesis is interesting, this patchbay session will try amongst other things to make the “computer or not computer”, “digital vs analog” debate obsolete in a rather practical manner by showing processes in which “digital”, more specifically computer programming, can not only make absolute sense in the setup of a more “trailblazing” type of (modular) synthesis, but also displaying that it is, in so many cases, better to combine both paradigms than not. It must be highlighted too, before anything else, that this symbiosis is still quite young for most and in that lies then a considerable challenge, tremendous excitement and consequently, far more promises then ever before. It could be suggested too that this “new ecosystem” is and will keep expanding and growing complex faster and faster and who knows, maybe rather sooner then later redefining “the experience” to the currently impalpable!

Back to Earth, the idea will be executed in a very practical, experimental and open manner, with on-going stints of performance. A proper gig setup will be at hand and the author and audience will go into and debate together all major steps, firstly understanding the setup and then going deeper into each of the processes pertinent to the session ideal<sup>1</sup>.

There will be four main interactive processes being demonstrated:

1. CV Processing
2. CV Generation
3. Audio Processing
4. Spatialisation Control

There is certainly beauty in the limitations of modular synth hardware and I am a strong believer we should cherish all sorts of research in the field, meaning one could, with no doubt, spend his or her whole life with a “nitty” small 100% analog system and still discover and create wonders but many deep explorers feel the need to expand possibilities in a more “extrapolating” fashion and realistically speaking, there is no way one could, or should want to have as many options for generating, processing and modulating audio and control signals with hardware as one can with the addition of a programming environment such as Supercollider or Max/MSP attached to the overall system through converters and interfaces. For instance and if you are curious, with computer programming one can tailor the analyses and comparison of so many signals in absolutely unique and personal ways, defining specific rules for then generating control that could simply be too complicated or not capable at all otherwise. One could bring into their modular synthesizer setup controls out of the analyses of imagery, text analysis (poetry anyone?) and any kind of chart. One can also bring in exotic mathematical equations and formulae in the realm of chaos, quantum and fractal theory. Computer programming is therefore a gate, a portal to combining and fusing “worlds”, and for a synthesis and sound artist a truly remarkable way of enabling new and interdisciplinary ontologies of sound and music.

While the example above deals with signal analysis and processing for control generation, it is obvious that audio rate synthesis can be programmed and combined in so many ways within a signal path at one’s hardware modular synthesizer.

Audio processing can also get into totally distinct forms by the help of code. Because certain processes can virtually only exist in digital, such as granular synthesis, computer programming come at hand. While there are modules with embedded code for that purpose available in the market, coding a granular synthesis environment from scratch or simply modifying or using already existing code surely makes sense for the most demanding explorers. And being able to modulate not only 4-6 parameters but also 20+ surely makes one wonder!

At last but not least, a computer and one’s own programming can expand to the edge of imagination multi channel spatialisation possibilities with already noted amazing results.

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<sup>1</sup> It must be denoted, perhaps sooner then later, that the author’s musical and conceptual preferences will not be constrained or disguised, hopefully contributing to the conceptual point and entertainment level of the presentation.

All of that will be displayed in different levels of depth in this patchbay session and let it be known, with a “free improv” performance bias in mind.

Be it with a computer and interface alongside or through modules with CPU that accept code uploads or live coding, it seems like there is a new paradigm of hybridity already establishing in the undergrounds of modular synthesis culture, perhaps out of necessity or clear vision, evolving almost unnoticed to some, drawing still some skepticism to others, but nevertheless pointing towards new frontiers of sound and music, both physically and metaphysically speaking.

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