

Cambridge Introductions to Music Music Technology

Emphasising the creative aspect of music technology, this *Introduction* sets out an overview of the field for music students in a non-scientific and straightforward way. Engaging and user-friendly, the book covers studio concepts: basic audio and the studio workflow, including audio and MIDI recording. It explores synthesisers, samplers and drum machines as well as basic concepts for electronic performance. In considering the role of the DJ, the book addresses remixing and production, drawing upon many examples from the popular music repertoire as well as looking at the studio as an experimental laboratory. The creative workflow involved in music for media is discussed, as well as controllers for performance and the basics of hacking electronics for music. The *Introduction* as a whole reflects the many exciting areas found today in music technology, and aims to set aspiring musicians off on a journey of discovery in electronic music.

JULIO D'ESCRIVÁN is Reader in Creative Music Technology at Anglia Ruskin University, Cambridge.

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Cambridge Introductions to Music

Music Technology

JULIO D'ESCRIVÁN



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‘I really know very little about the technology of these instruments . . . but I do know what their buttons do. I have a lot of analog instruments in my setup still, and I know if I turn this little button it gives me a little more brightness, for instance. So, when I sit down to play – which I do almost every day – the first thing I do is find me a sound. The moment I have a sound, I have some music.’
Josef Zawinul, keyboardist and band leader for Weather Report. (Mandel, 1996)

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Preface

It is difficult to know exactly when electronic music became part of university curricula, but it was probably as early as the 1960s, at least at graduate level. However, we can safely say that ‘music technology’ as a subject, or as the title of a course, is a fairly recent development. The term probably began to be used in the late 1990s and has only become a standard feature of the higher education on offer in the 2000s. There are a great number of music technology courses all over the world. In Great Britain alone there are, at the time of writing, around eighty-three higher education institutions that offer BA Honours degrees in some aspect of music technology: creative music technology, sound technology, music production, music and sonic arts, and many other variations. The subject is popular and encompasses a wide variety of topics, including sound synthesis, composition, sonic art, electronic music, music for media, computer music and many others.

The problem is, in a sense, how wide ranging the choices are. It is a problem for students, since under a similar heading they can expect very different courses from different institutions. It is a problem for universities, because there are many types of candidates with different but useful skill-sets that are suitable for the course (two of my best students did not have any music background, but had foundation studies in art and design).

But how is music technology different from audio technology? Audio technology only becomes music technology when it is applied to music-making. This sounds obvious to begin with, but it isn't. From an old-school perspective, anyone who is ‘twirling the knobs’ or programming is a technician and not a musician. And, indeed, this is how it all began. The reality of it is that as technical facilities have become more accessible, musicians have become empowered. They no longer have to rely on a specialist to make the machines work, as was the case up to the early 1980s. MIDI and hard-disk recording have firmly put the musician in the driving seat. Technology is now also at the service of composing, arranging, writing and orchestrating music, as much as in the past it has been at the service of recording and synthesis. This is not to say that we don't need audio technologists. Audio scientists are indispensable, as they calculate necessary stuff like more natural-sounding reverbs, digital-signal processing plugins, new synthesis algorithms, software abstractions, and develop the

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informatics of sound management and storage. Yet without a doubt, these pursuits remain firmly in the field of science, sometimes without enough contribution from artists looking to use and misuse the tools. Yet there is probably more science in everyday music-making than there ever was before. This signals a change in education curricula which is only happening gradually, so it is not uncommon to have first-year students balk at the idea of learning to code or calculate (or even be aware of) an acoustic measurement; they didn't think they had signed up for that!

This book will help you explore current trends in music technology while introducing some key concepts and techniques: it aims to give you an overall view of the field. It probably isn't deep enough or comprehensive enough so, beware, this is only the tip of the iceberg. There is a lot of follow-up work you need to do. Simply reading it is not enough. Try and verify the ideas presented here regarding microphones, production and mastering, for instance, in your own music-making. Think about the experimental possibilities of your studio, dream up weird and wonderful controllers, get ready to hack your younger siblings' (or children's) toys. Follow the threads of information provided by the references and you will discover a rich world of musical experience, much more than I can include in fewer than 75,000 words. It will enable you to embark on what could be a lifelong journey of creative interaction with technology for the sake of making beautiful sound.

I have organised the book into four areas. Broadly speaking, Chapters 1, 2 and 3 review the basics of sound and consider the process of recording and creativity in the studio. Chapters 4 and 5 are more focused on DJ and laptop performance issues. Chapters 6 and 7 are aimed at the working musician: it is probable your work as a professional in the near future may strongly involve production or making music for media. Chapters 8, 9 and 10 are dedicated to creative music technology, where we will look at The 'X-Files' of music technology: dreamt-up musical instruments coming to life; making musical sounds with unthinkable objects and generally pushing our gear to the limits for the elusive prize – a sound that will give us some music.

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Although I am certain I will forget somebody, I will try to mention everyone I am in debt to. So . . . for making it happen, the editors, without whom I wouldn't even have thought of writing this book: Vicki Cooper who had the idea of commissioning a title like this for the *Introductions* series, and Becky Taylor who, together with Vicki, gave me the support, encouragement and guidance I needed during the writing process. Also to my Production Editor Christina Sarigiannidou who helped me navigate the intricacy of the final stage with kindness and good humour. For generously supporting me through a sabbatical for most of the period of writing I am grateful to Anglia Ruskin University and in particular to my Head of Department Paul Jackson, whose friendship and collegiate spirit have helped me through this project. For kindly reviewing chapters for me: Nick Collins (the English one, the younger, who is always a mentor to me in these things); Justin 'Dr Hip Hop' Williams; film composer and fellow scholar, Miguel Mera; film composer Roger Jackson; *compadre* Gareth Stuart; and admired creative music programmer, Thor Magnusson. For being part of the Twitter and Facebook crowdsource that I bounced ideas back and forth with: fellow author Bob Gluck; fellow composer and SuperColliderrr Jason Dixon; fellow composer Miguel Noya; my former students and friends Paul Jones, Jack Ashley, Natasha Roberts and Daniel Smith; and all those who poked me with their comments, likes and tweets as I shared my book-writing pains! And, for giving me helpful comments in class as I tried my explanations and graphics on them, my students of Laptop Musicianship at Anglia Ruskin University.

Finally, Milly, my wife and partner, who supports me unconditionally and my beautiful artistic daughters, Isabel, Mariela, Emilia and Ana Teresa. *Music Technology* is dedicated to them.

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