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P1

Interview: Session 1

R: Talk me through your composition process and what you did in the session, please.

P1: Yes, god. It was a bit of a mess this time, so like normally, I guess it's like somewhere between a composition and a design for me. So like, I make some kind of interface, I guess, or some, like, I'm thinking to myself, Oh, there's this theme or whatever. Wouldn't it be interesting if that was... that was how you interacted with it. So like umm, to be interested in if like I typed on my keyboard it like drove the progression of this piece or something and then and then iterate on that. So, like, oh, the keywords would be interesting, et cetera, et cetera. Like that kind of style of composition, I guess.

P1: Whereas this time I didn't have an idea, um, so normally it's idea first, technology afterwards. As time it really felt like I didn't.. I yeah, I wasn't sitting down trying to do something particular, umm.... which is tough. So I just sort of explored. I know... I had an idea of what possibilities were, and so I thought I'll start off with what I know you can do, with this AI and umm, see if I can introduce any other processes into that. And so like I was trying to do this encoding, decoding thing, and then I started trying to sort of particularly operate within the latent space and then just try and like do stuff just in there. So that was like my constraint. I was like OK I'm going to operate just in the latent space and try and like sequence that and like sort of drive stuff within this and just like, like it's one instrument you know and so yeah I just was trying to... make that work both technically and and creatively

R: so when you said it was different this time, is it this time using AI tools or do you normally use AI tools when you're?

P1: I normally use them if they feel, relevant, like if I know what they can do, kind of. If I'm using a piece that sort of calls for that, then I will... Um yeah. Whereas this I think what was different was my aim was not to do something, my aim was to use something you know.

R: So you also mentioned you sort of set yourself a constraint to look at this latent space. Could you elaborate on that for me, please?

P1: Yeah, sure, like as I was going, I sort of uh started to separate out the different scopes. So you have like the audio domain for the rendered sound, I guess. And then there's different things that can go into that. So in Max obviously they they differentiate between like sequences and signals and I just wanted to differentiate further between like what the signals are. So, the signal is audio. Are they latent constraints? Am I using [INAUDIBLE] like triggers and that kind of stuff like phases?

P1: So yeah, so I was using the latent space as like um, so in RAVE for example you have like 4 to 8 axis you can like drive and it create sound and so I was just like driving those basically.

R: OK, cool. So, could you just talk me through the reflections that you put into Miro?

P1: Yeah, sure. Let me have another look.

P1: I'm gonna go top down, which is sort of counterintuitive, but yeah. So the first thing that I said was that yeah, I... getting output as soon as possible. So I think what I find difficult I mentioned already, was um doing this, like, Yeah, composition, ummm... without an idea. I normally spend time away from my computer. Thinking about these things and thinking about this stuff, and, that's when I come up with ideas. And then normally when I compose, I sort of mine through my notes and um

R: And so that's kind of what you talked about. Also, here you say this feels like ideation rather than composition. Is this because that's that was the, you know, what you're trying to get?

P1: Yeah, I'm sort of just like exploring. Um, this is more just like, oh, what are the things that are possible here? You know, as opposed to um this actually being output. One thing I also do a lot when I'm in Max is I just record the output audio, just constantly. Um, then I can go into something like Ableton and resample just like everything if I like heard a cool sound or something. Um so often times like it will be Max like for exploration. Then I'll arrange like a finished piece in Ableton maybe, and then I will turn it into like a system again in Max, like a fully realised system. But I think I feel like I'm at the first stage of like the ideation.

R: Yeah.

P1: Yeah. Sort of just making my own samples, I guess. I guess that kind of ties into the simple idea, complex execution thing of like, I, I can only think about one thing at once, so like... hence the sort of constraint of being in the latent space. You know of like... I need to have very clear like simple bounds.

R: So, yeah, if I go to this one now then, um so maybe talk more to this comment here, about, you became sort of aware that it was a technical approach.

P1: Yeah, I mean as I think as time went on I started becoming super aware of points where things, but I guess where things weren't working or like, I don't wanna well yeah like that kind of thing, right. Of, like, umm, I'm becoming aware of, like the artifice of the technology, or like the fact that that is between me and an idea. And I become increasingly aware of that because there's not even an idea for it to be between me and it.

P1: You know what I mean? Like I don't have an idea that the technology is in the way of I'm just interfacing with the technology at the moment. And I think, so those moments where your having a problem and you're like, well actually, do I even need to have this problem? What's the aim? What am I trying to do? Yep, that was when I was becoming like super tech first approach. Yeah.

R: And so yeah, it seems like these ones over here. So, where you're talking about you move away from the sample thing about latent control, or umm, this is about the signal and

sequences. I think this one here, and then you're talking about um. Sort of then being reluctant to scrap things. I think these two are these sort of are we talking about. it kind of links to this tech first thing, right where you're aware it's there, you're trying to manage the scope of it maybe.

P1: I'm aware that what's there, Sorry, I didn't hear that.

R: So I'm just thinking, does this sort of, is this you trying to control the sort of scope of the technology?

P1: Yeah, But also I think it's me thinking about how ummm expressive. So like using a sample you can get like really expressive stuff because its just sound right can do tonnes and you're creating on such a small scale. But then like the complete opposite of that is like a synthesiser, but you have so much more control but not as much expression. And then you can add more expression to, the like, the the synthesiser by using sequences, because you're giving that control to something that can operate faster than you and so it can get like, you know some finer grain stuff, right. So like, that's why sequencing such a big deal with computers and stuff it's great. But then yeah, I the problem is if I'm using a sample to drive the latent space, I can't control the latent space as much, but it does sound cool, but then how am I performing it or coming up with this idea? And umm, yeah, so I'm trying to do the same thing with like treating the latent space as some synthesiser or something of like how do I control it? If I do give tonnes of control to the computer, that's great, but like, what sort of meta control do I have where it's actually like a meaningful instrument? Umm, you know, that kind of thing is. Yeah. So I guess you are, Yeah, limiting or negotiating the... you know.

R: Yeah. So I think, OK, I'll ask the question anyway, but we've probably already done. So what? Was there anything that stood out to you was super important or super surprising?

P1: I was surprised by how little I got out of it. Actually, like the end of this thing, like at the moment, all you get is just like a ramp, like a Timbre ramp. Like, yes, its really, umm really unimpressive. Uh, I think that caught me off. I mean, it's not that much time. I'm not spending much time in it. So I guess that's expected. But yeah, that caught me. That caught me by surprise.

P1: I think it's one of those exponential things with Max, like it starts really, really slow and then, I hope at least, you sort of get more out of it.

R: So do you find that something about Max and not this particular patch?

P1: I think it is because there's so much groundwork you have to do all the time. You know, it feels like 50% of a Max pack is like infrastructure. And just like this is how, you know, I've defined how time's gonna work in this patch. You know, like it's not. That's not a given. So I think, yeah, that kind of thing, is is, sort of... But then you have a sort of you slowly build a world of how things relate and this is also what I was saying about the template. So I guess context for this is that I recently lost a lot of my Max patches and stuff, and so I don't have a lot of my typical workflows like as abstractions or stuff I can just drag in. And so, like my Max

patching of late has been lots more infrastructure than it typically is anyway, because I can't just copy and paste from existing things. So that's an additional factor. Yeah.

R: So focusing then on the AI stuff, does that make... what are the challenges then presented because of this in relation to the AI?

P1: Yeah, I think... I guess... I mean different systems require different inputs and preprocessing and stuff and then if you don't have preprocessing set up then using AI is like a massive pain. Obviously... ummm... I didn't lose any like pre trained models and stuff so that's fine. Um But yeah, some... some systems are quite funky, so like things like Wekinator - setting up the OSC and then loading the weak proj from like within a Max patch, like those kind of things contribute to the AI challenges, like the lack of I guess like standardisation for doing these things. So that's why I sort of at the moment limited the scope of my AI use to the NN~ package, because that's native to Max now. Or atleast, it's like a external that works in Max with like no, you know, no extra tricks needed. I'd like to explore flucoma as well for a similar reason. But yeah, there's this, all these AI things are disparte and and therefore really difficult to integrate with each other.

R: Yeah, OK. So, if you had to summarise your session, what you just did in one word what would you go for?

P1: Oh, uphill.

Interview: Session 2

R: Talk me through the composition process.

P1: So I started where I left off. I think that's what I'm supposed to do.

R: Yeah.

P1: I... What do I do? Hang on. I'm just going to look back through the things, um yeah, I sort of. I started off with an accident really. Um, so I was just trying to like do a oscilloscope like visualisation of my output just so I could see what the timbre's and stuff were looking like as it was coming out. And then I ended up getting sidetracked into like into modulation, and that kind of stuff. And then I started thinking about control systems for, the latent space and the stuff that I was talking about before about, um, sort of this difference between control and fidelity, I guess. And while like static values are really controllable and not really high fidelity - and sequences are like not much control – but very high fidelity, I started thinking about the intermodulation of like waves as like a control parameter for the latent parameters. So I thought, I can control the frequency of waves, and that's something that, I mean, I guess as a musician you do anyway, um but like, I can control LFO's and stuff um just like on a, you know, Yeah, in my own sense. And then they can interact in a way that's predefined and then create some sort of nuance within the latent space. And so I just spend basically the whole time trying to explore different ways of doing that meaningfully.

R: And that relates to these post-it notes, I think.

P1: Yeah. Which ones? Where?

R: This one.

P1: Yeah. Yeah. Yeah, definitely.

R: OK Yep. So yeah, I would say, wait, can you see my mouse as well? That's cool. So like this one. But yeah, this middle. This whole middle block. I think, umm, from like, here till like here. That bit.

R: Yeah, cool.

P1: Oh, actually, just these four. Really. Umm, so that's like, yeah, so I sort of mentioned before the sunk cost thing. I was like, I put loads of time into making the system work. I want to like rescue it. So I spent some time trying to make that sort of, yeah, trying to find some kind of way and then was looking into how intermodulation works and then tried to implement it myself, which I did and was fine. But then um I couldn't find like an easy way of implementing phase without bringing in those artefacts and all of that stuff. And so I went back to the stock one. So that was like 30 minutes down the drain of just implementing intermodulation to then delete it, um.

R: Yeah. And then is that related to this sticky note over here?

P1: Hmm Yeah, kind of. I guess the creation of it is. Yeah, so, like, these are kind of related. The non-interpretable and preparation thing are kind of related as is, I guess that's actually no. Those two are probably the main ones. But it's just like, yeah, I so I'm oh, yeah, I guess. OK. So I can go from this one to this one and then to that one. I think so, yeah. So I was saying before like... I'm implementing stuff normally myself but then because the AI's a black box model I can't implement that myself. I mean I could but with data right? As in, I can't like create a deterministic system or like a rule based system to implement the same thing. And so I define some scope of like "This is where I can play with" and then "this is where that ends, you know" then I have to like hand off some control to something that. Yeah. And then you know part of the composition, like when you're composing for an ensemble, part of that is also learning. You know, you have to take into consideration things about like what people can physically play and like the ability that you know. So they kind of shape your composition cause of the limitations and you're composing for people. I think it's quite similar here in the sense that like I can't control the model and I kind of know what's happening. But that's a good thing because like after exploring it a little bit you start to get a feel for the, the, limitations and how it expects you to give it stuff etc etc. So you sort of try and compose into that. I I sort of, it feels like having a limiter at the end of your track, like and just like putting lots of stuff into your limiter and it's just like you get all these weird artefacts and stuff, um like yeah, and like that soft clipping and stuff but like conceptual soft soft clipping, in like a weird sense. And so yes, I like composing into it, but I still don't know what's going to happen. It's not deterministic enough. And so it's more like , oh if I find something cool, I want to be able to meaningfully iterate on that in the moment. And so I'm

trying to create my own control space where it's like as smooth, um you know, as smooth transitions between points with enough nuance from them as well as possible. Yeah. So that has been really the composition process so far. And then I think it will probably be, well, actually, yeah, the thing after. So in this bottom corner, what is sort of starting, starting to come through is that like the way the windowing works with like the Timbre reconstruction and all of that stuff, like some of the aspects of the of the actual like RAVE decoder -- really, really interesting because they create their own like rhythmic artefacts. So even if I don't feed it anything, it, like, creates its own rhythm. Um and so I wanna play with sort of hijacking that, like, you know like, leveraging that 'cause that's interesting aspect for me, you know?

R: And so did you land on this after this sort of area here? You kind of came to it.

P1: This is chronological. Yeah. So.

R: Yes. Yeah.

P1: Yeah, So I did. So I was sort of experimenting with them and then started to get an idea for the control I can get and then. Sort of towards the end though, it's like, hang on a second, I could probably use a classifier to make – 'cause I'm getting one of these different sounds at different rhythms and stuff, it probably is a classifier to try and like, orchestrate those. Or I could, you know? Yeah. And so that's what I've That's why I then started just exploring right at the end. And I thought I'd stop.

R: Cool. Yeah. OK. So tell me about this post-it note.

P1: this bit, yeah. I think this is more... I guess I didn't rea::: on the like macro scale. I don't think I re-examined or like, um, yeah, looked at an alternative way of doing what? Like the way I compose, or like the way I've been doing this. Even though I reached some dead ends, I don't think that prompted me to try a different, like, a completely different approach. I've been like trying to salvage what I can.

R: And so in the previous session you were doing a little bit of that kind of thing

P1: potentially I think. So, yeah, I go across, yeah, I was sort of, I think I have a few existing methods that I was trying to sort of assess you know, assess the value of. And then I think, yeah, towards like in this section I had gone so far in with this one method then it didn't feel like it was productive to

R: to abandon it completely or.

P1: Yeah, yeah, yeah. Yeah, exactly,

R: exactly.

R: OK. So just let me have a little quick flick through. OK. Let's look at these words in particular. I think you said at the beginning. Also, - I think you said you were surprised. I

don't want to do a leading question. But so here, you're right. You stumbled across a technique and it caught you off guard.

P1: Yeah. You want me to talk about?

R: Yeah, just a little bit.

P1: Yeah Of course. Yeah. So, umm, yeah, when I say stumbled across I I mean in in my memory I guess, not for the first time, but yeah, just this idea of intermodulation. Umm, so intermodulation distortion rather than like like frequency modulation. So the idea of like - you get the frequencies you have the you frequency one, frequency two then the addition of the two then the subtraction of the two and those like from 2 frequencies now you have 4 frequencies which is great, and then those sine waves interact with each other and then you get one sort of complex wave right? And when you have like um two sine waves with the same frequency, then you just have basically like, like nothing out.

P1: Yeah, yeah, yeah, exactly. You have a large sine wave with, umm, with a harmonic at the first octave, 'cause you have the because you add the frequencies, right, and they're the same, so you get double, so great. And but then like the minute you start shifting it, you get all these different things, um... and that's great for high frequency synthesis. Um but one thing I like - and that's what I sort of knew in the context of but then coming across it here - like when I looked at the scope documentation, I'd looked at to help file and it was set to a really low frequency. I started to see this intermodulation and really low frequency and I thought, oh, I should try this with LFO's. And So I did um, and it just has sort of sparked this whole interaction of using classic synthesis techniques, but at a lower rate and within the latent domain, right? Because that makes... makes it audible, but like on an automation level. And it sort of ties to uh this one down here.... Because there's this piece, this piece called Stria, which is by John Chowning. And it's like an FM piece that slowly is like 25 minutes or something, but the whole is just evolution of two parameters. And it's like doing

R: OK, yes. Yeah, OK yeah that makes sense.

P1: I only actually realised the link as I was doing the reflection.

R: But yeah, so what's interesting I think here then, so this is in a reflection on self-box.

P1: Yeah.

R: So how does sort of John, John, Charlie piece and sort of relate to you, if that makes sense

P1: I think by that, by that way of that that segmentation of the box because, I mean me as a composer, I guess, yeah, it does, right. Like it's... it's like typically I think about things like that, like those pieces are very influential to me and like, I make stuff, I tend to make stuff with, you know, like I said before, like a very clear idea of what the type of interaction is, what the flow is. Then I sort of enact that in the software as opposed to like, I mean there's some emergent stuff, but that's a very distinct activity to the composition. Whereas like I

think, maybe that's what it was that I reflected on it myself is that like this has taken... because this is something that I don't have necessarily tonnes of experience with, but even if I did have tonnes of experience, I wouldn't know exactly what it's doing in the same way that I do with like FM and with sampling.

P1: Um like it has really challenged my typical mode of being I think in terms of like composing. So I think that's that has like to do with me.

R: Yeah, OK.OK, cool. So if you had to summarise it in one word, what you just did, what would you go for? Oh it's a tougher one. Hmm... I'm going to say intermodulation. That's boring. But I'm going to

Feedback on reflection process...

P1: yeah. It's kind of exhausting. I feel very.

R: It's a lot of thinking, isn't it?

P1: Yeah, I think 100% switched on because you're like composing and then you're like, OK, I'll stop composing and then now you're reviewing all of that and then you're reflecting and then you're talking about it and it's like, yeah, it's intense.

[Interview: Session 3](#)

R: Please talk me through your composition process and what you did in the session.

P1: Yeah, umm, so this one is interesting. So I had these like intermodulation signals I was using to control RAVE and stuff And I thought, OK, well that's swelling good. But it sounds just like, like, I was saying at the beginning, just like evolving timbre, like it just isn't anything. And I wanted to use a classifier to try and like get those rhythms and stuff, et cetera, et cetera. And then that like it was gonna be a lot of work, just again infrastructure wise. So I was trying to I tried to use another model that was like more for that kind of thing, like another RAVE model. Just loaded in another torch script, and then that wasn't working. So then I thought I'd try like a sample. So I tried to do playback, but based on the waves, so it plays through the buffer at that speed and stuff. And that was cool. I got some sounds out of that. And then I was like, OK, well, I can take the 0 crossings and stuff like that and then like make slower rhythms based on the 0 crossings.

R: OK, yeah.

P1: It's a modulated waveform. Yeah. So I took those. And then made like a little Euclidean sequence from the 0 crossings.

R: OK, Yep.

P1: And then that now triggers like a little synthesiser I made I guess. So I made this like quick little FM synth that is triggered that has like a ADSR and then it triggered by the

Euclidean sequencer which is triggered by the 0 crosses, which is triggered by the Intermodulation.

R: OK, and the intermodulation goes into the rave model. Does it? Is that right?

P1: And so it's literally just two numbers and that goes into the RAVE model. It goes into the Euclidean thing and everything.

R: OK, I see. Yeah.

P1: Yeah. So it's cool because you get these, like, they behave in different ways. And so you have to, it's like this negotiation between the two instruments.

R: Mm-hmm.

P1: Of like, uh, OK well, this is like a optimal space for this instrument where it's like a cool rhythm, but it's like completely messed up this other one. And you decide to sort of, you can decide compositionally whether you want one to dominate or not, etcetera.

R: OK.

P1: It was nice. I did like a 1/2 an hour, like improv. I just like recorded everything and just like tried a bunch of stuff. And then one thing that came out of that was like, feeding, like across so it was like using the model to encode and decode the actual like synthesiser. So I had the FM, and then I was feeding FM into the RAVE, the same RAVE model that I was controlling.

R: OK, like a feedback loop, right?

P1: Yeah, but not but not a loop, because the FM wasn't coming from the decoding of the of the RAVE, right.

R: Yeah. So, two instruments. Like, that's just.

P1: Yeah, the FM synthesiser. Yeah, yeah, yeah, yeah, the Synthesiser output comes into the RAVE input as well as my controls. So I'm like, so my controls like my XY controllers can kind of steer the – um the like encoding of the of the FM. And so yeah, I have basically like 4 controls. I have the FM, the XY controllers for the Timbre, I have the Intermodulation controls and then I can also like change the parameters of the FM. And so I just like did improv stuff, messing with all of those sort of parameters. And then after our conversation where I brought up the idea of like, like a conceptual soft Clipper or something like like that kind of thing. I decided to put an actual soft clipper in the end of the patch. And so like everything sort of gets forced to to again. It's like it's negotiation. Like sounds are forced to dominate or not dominate. You know like

R: OK, yeah, yeah, yeah.

P1: They really blow each other out kind of thing, which is nice.

R: OK.

P1: And then, yeah, you sort of get this one figurative instrument. That's cool.

R: Yeah. Super interesting.

P1: So I just did that and then made some notes. And then I've made, like, a rough plan for, like, OK, well, when if I, like, perform this, it's gonna be this bit. And then I'm gonna do this bit. And then so and so.

R: Yeah, Yeah. OK, cool. So this is the sticky note, I guess, which is OK. So you say the majority of the session doing the auditioning and playing. Um, so I tried a number of sound sources made. Made note they didn't work. So I guess this is thinking about, or at least it's in the process column. So can you elaborate on like the thinking you did about your process and this kind of thing?

P1: Yeah yeah, um, I guess, my typical process, like, I work with one of two things I either I work very sample based or I work very FM based. And so those are my two gotos and I thought I would try both and I tried a number of different samples. I tried a number of different like FM types, like paradigms I guess. And um yeah, and and and just that didn't, like. There were lots of times where that just didn't gel with what the latent thing needed, like what, uh, the latent space needed is input, right? So I just sort of had to come up with stuff that – I had to like create instruments that were amenable to the behaviour of the AI synth.

R: OK. So it's more than, I guess, thinking about how everything was working together.

P1: Yeah

R: Yeah. OK, OK, cool. Umm, did anything stand out as surprising or important?

P1: Umm. I mean, I was surprised by the sounds that I got out, particularly the like, feeding stuff, feeding stuff back into the RAVE model, and then also just having it bolstered by like real sounds, like like a real synthesised sound, right, 'cause then you have some consistency. So like having the deterministic system as well as the like super unpredictable. It was like, OK, well I have a lot of control over some aspects of the sound and then there's some bits I have to accept I'm not going to have control over. And it's like, like I've been sort of talking about this whole time, figuring out that negotiation between what you want control over and what you don't and what you're willing to hand over for, like, fidelity and stuff. And then there would be times where I'd be playing and I'd hear like a tiny bit of something and RAVE was really, like, surprising me. And then because I had the, like, this balance thing that I put into the patch with the soft Clipper, I could like, magnify the RAVE thing and then like, you know, really work on that during that sound out. And then it would disappoint me again. And then I bring back in FM. Yeah.

R: Yeah. Yeah.

P1: Like, yeah, it was cool. Yeah. Yeah, I think that was it. It really worked as like a surprise prompt. So it kept me like, yeah, it kept me because like an FM, I know, well not I know everything that's going to happen, I'm not a supercomputer. But like, most of the time, if I put two things together, I know exactly what, what kind of sound is going to come out. Yeah. And so that can stop you taking risks and experimenting because you sort of in your brain you're like, oh, well, I know that. So I'm not going to try. Whereas this was just like I'm going to try everything, so yeah.

R: OK, so yeah, what's your one word, your one word summary?

P1: Homogeneous.

R: OK.

P1: I just say homogeneous because I think is interested in looking at the concept of like 3 different voices moving as one sound and like that kind of thing, like the controls going in, getting funnel, coming out, getting funnelled together, like that kind of thing. It's like, you know, squished. I should have said squished, but yeah.

[Interview: Session 4 & Post-Task](#)

R: Talk me through the process and your reflections.

P1: OK, Well, I guess, yeah, I got the screenshots and stuff chronologically, so I can talk you through that

R: Umm did you start with making a patch?

P1: well, it started with, yeah, yeah, making like a, I shouldn't say from scratch. What I mean is like the patch does FM like the Max patch? I shouldn't use patch in both words. I what I mean is the like Max patch is like the architecture in the same way like a DX 7 is right? And then when I say like an FM patch, I mean like the same way you would make a patch on on a DX 7. Like it would just - yeah, yeah, yeah, yeah. So I'd like - started off with like the sequencer and stuff and then was making this like really... I don't know... fundamental heavy sound. And then was trying to like add some overtones and stuff. Ended up making like a bell I guess, like the Classic FM bell sort of sound, which is cool. Um the problem is then I think I'd forgotten what I'd used to make sound, like to get sound out of it. Because when I did the last session I closed Max and obviously I I for some reason. I'm really bad at saving presets and like pattern and stuff, so when it reloaded like there was nothing coming out. Even once, I'd like made the sequence go and made the FM patch, etcetera, etcetera. So there's a bit of debugging there because it just becomes super complex. And then finally got sound and then managed to bring in all three of the sound sources. So that's the sample, the FM and the like, neural decoder.

R: Yep.

P1: Then 'cause those are going into that like soft clipper and stuff. I then went back into the FM patch and sort of tweaked that in order to like impact the other sounds and this sound, the space they had in the mix.

R: so this happening live. So like

P1: yeah the this was all real that yeah this is all real time I I got about 40 minutes again recorded. Actually one thing I should put in here, One thing I did find that was new which would be... yes, reflection on current process... yeah, is like generating sound outside of the audible range, but interfering with the audible range.

R: Yeah

P1: So one example I would give is is like having like a LFO that's then biased so that it's like constantly sort of positive, which is something you can only do digitally I guess. And then sending that into the the software player and then like takes out all the other sounds, but you don't hear the sound that is replacing them, right? So, you get all these weird silences like these like gates and stuff, which is interesting and then you can sort of. I think that was something that I found from sending latent signals, which you can do that with, right? Like latent signals, it makes sense. But like, because they're in the same domain, you can send latent signals into, umm, into like audible processes, right? And then it impacts that. Uh. So that was cool. Like mixing those two, Umm.

R: And then, yeah, then you just kind of performed it, right.

P1: Yeah. And then I just followed the performance notes, really, which was cool. There was not really much that caught me off guard. I mean, it didn't do anything I was expecting. It wasn't that. It didn't sound how I was hoping it would sound based on the notes from the previous one. I just sort of anticipated that, right.

R: Is that because of the randomness from the AI?

P1: Yeah. I think partly that. And also partly because the patch is just quite fragile. And I didn't because it was like a very rapidly developed thing. Like I started this morning. It doesn't, you know, it doesn't have all the fail safe and stuff that you normally would to like retain states between things and etcetera, etcetera, etcetera. But yeah, it was quite chaotic. It took a while. Like a lot of that 40 minutes was just getting it to like sit in the same place that it had been last time I used it, you know?

R: So, I think that's it. We talked to the composition process, talked through the reflections, and you just told me something that was surprising, I think.

P1: Yeah, yeah, yeah, yeah.

R: Do you want to pick your one summary?

P1: Umm, man, I don't know, man.

R: I I just recording. Right. Finishing up or Yeah, I guess, Yeah, yeah, yeah, yeah.

P1: Recording, Yes.

R: OK. So I'm going to a few more. This is like a final time one that it's all about everything.

P1: Oh actually, sorry, one more thing. I realised it didn't just perform it because I fed it, but I did the feedback, which I said I would do. But OK, I fed it back into itself. Into itself. And then also the weird. There's like a delay when I fed other sounds in, so, because they say it's like low latency, but it's like a significant amount of latency still. It's like several less than 100 milliseconds, but it's still quite a bit. And so you get this like weird echoing. So if you have like the FM and then you feed that into the decoder as well, yeah, and you sort of, you get these sounds that sort of climbs against each other. I try to like leverage that as a thing, but that's something that also surprised me because I just, I just saw something I thought about. Anyway, that is it.

To post task:

R: So now, asking questions more broadly about like having to do the Miro and then talk about it as well. So do you feel like that helps improve your creative practice, at all?

P1: You know what I think they actually did. I was sceptical, I think of Miro, but I I one thing I would say is the process of making the screenshots, actually. it was good like the process of looking through and having to decide what documents were. I think that process in and of itself is good. I also think reviewing those especially I don't know if you saw, but I added comments for each one so it has like, so there's like captions for each screenshot, so that I think doing that before the interview also really helped to refresh my big picture, right? Because you could have asked me questions in the interview and I would have just been thinking about the most recent thing. But I think this helps me think about the whole process. That was good.

R: OK, cool. What didn't you like about it? How can it be improved?

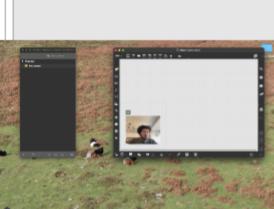
P1: It's just tough. It's a lot. I think that's all it is. Like, it's heavy. Yeah, it's like rich, rich data, right? So that's always really difficult to collect. And I don't know if there's any way of removing, like everything I've said that is a benefit is due to my involvement in doing that process. So I wouldn't want to automate it or take that away. Yeah. I'm not really sure how that's solved, but it's just intensive, I guess.

R: Did you find any unexpected findings thanks to doing this reflection thing? Did it like change your process and what you did?

R: With my own process? Umm. I think even the fact that it just forced me to take screen recordings and review was good like that that I like. Yeah, there were some things I caught or that, like during my practice, I don't necessarily sometimes know why something happened or whatever, whereas like having recorded it now, it's like super helpful.

Miro: Session 1

Reflection 1:

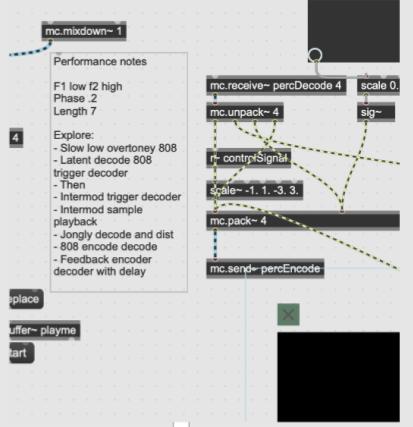
Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
			
			
	<p>This part feels like ideation, rather than composition. I'll probably come up with the idea for the piece on my bike or something</p>		
	<p>Moving away from sample use and towards some latent control seemed more like the direction I was going to go now, but I wasn't sure how to keep that dynamic</p>		
	<p>I opted to use sequencing at a signal rate, samples felt very dynamic but too out of my control, whereas xy controls felt in my control but too static. I began iterating on how to drive this sequence</p>		
		<p>I like to get output as soon as possible. Something to iterate on. Most of my ideas come from time away from the computer and so staring at a blank screen does not feel productive or inspiring</p>	
			<p>Simple idea -> complex execution or Complex idea -> simple execution Never both, and idea always first.</p>
			<p>I need more templates!</p>

Miro: Session 2

Reflection 2:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
	<p>In my attempt to scope the output, I stumbled across a classic synthesis technique. This caught me off guard but gave me more ideas to explore</p>		
			
			
	<p>In many ways, no. This section shows me sticking quite strongly to my guns in my use of signal-based sequencing in the latent space. I gave it one last shot and I was into it.</p>		
		<p>Sometimes I can't help but implement things I don't have to. The blackboxness of rave can be helpful because it marks bounds which I can't cross - I'm not going to reimplement a tool I don't fundamentally understand. I have to play by its rules to some extent.</p>	
			
	<p>I experimented with, and compared two ways of making the same waveform.</p>	<p>Since the AI is non-interpretable, I can't think of my composition in the same deterministic way. I have to think like a stra can be performed. (STRA perfect reference for what I'm doing here) That's good because it makes me think. As a sampling, an experienced user like myself has a good idea of what will happen when certain parameters are changed. With the AI, I don't have the same affordance, so planning as I usually do feels pointless</p>	
	<p>One idea which emerged during experimentation is that of triggering sounds from the latent space, rather than just its decoding</p>		
	<p>This means I am considering the use of several AI systems</p>		
			<p>I feel like this an exercise in preparation now. Like I am trying to give myself the best possible tools for improvisation/response to what the system will do. I couldn't possibly plan.</p>

Miro: Session 3

Reflection 3:				
 Reverse order oops	Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
				
				
				
				
				
	<p>I tried a number of different sound sources, and made a note of when they did/didn't work</p>	<p>Yes, the majority of this session was creating and auditioning additional instruments to play alongside the latent vectors</p>	<p>I did a 30 minute improvisation with the patch. Adding as I went and recording parts. I made a note of interesting parts of the session, for future use.</p>	 <p>mc.mixdown~ 1</p> <p>Performance notes</p> <ul style="list-style-type: none"> F1 low F2 high Phase 2 Length 7 <p>Explore:</p> <ul style="list-style-type: none"> - Slow low overtoney 808 trigger decoder - Trigger - Intermod trigger decoder - Intermod sample playback - Jongly decode and dist - 808 encode decode - Feedback encoder decoder with delay <p>place uffer~ playme start</p>
				
				
				

Miro: Session 4

Reflection 4:				
Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?	
	No, most of it was planned at this point			
			I really enjoy noise and jamming. Its tough to set up, but I thought that I should do it more often	
		As I added more means of compression, I revisited individual sounds, tweaking them to see their non-linear impacts		
	Generating sound outside the audible range interfering with audible sounds. Surprising!			
	Fed back into itself			
	Delay fed other sounds			

First-Person Account (Unedited First-Draft)

My work starts off with a question of ``how might this piece be performed'', where my ideas are somewhere between composition \& design. For example, I might make or queer a musical instrument rather than relating the music to a compositional theme. This time it was difficult because I had no initial idea – the aim was not to try and \textit{do something} but to \textit{use} something (the AI).

I became aware/uncomfortable with the tech-first approach inherent in using RAVE in MAX. Typically, I like to get output as soon as possible. Something to iterate on. Most of my ideas come from time away from the computer and so staring at a blank screen does not feel productive nor inspiring. I started becoming aware of the artifice of the technology, between me and an idea, becoming increasingly aware that there is not even an idea in the way yet -- just the technology. Do I even need to have this problem – what is the aim – what am I trying to do?

Whilst I started to explore, there emerged this tension between nuance and control, mainly between sampling and the controls I was trying to implement. I started with separating the different scopes of sequences and signals in the Max patch.

The 8-dimensional input of the AI and its non-deterministic output made me re-evaluate the structure of my typical process, with liveness [croft] in mind. What layers of abstraction did I want? Where did I want that to be? Moving away from sample use and towards some latent control seemed more like the direction I was going to go now, but I wasn't sure how to keep that dynamic. Nonetheless, I opted to first try sequencing of some kind.

With the sequencing, I was initially surprised by how little I got out of the RAVE model. All you would get is a timbre ramp. I anticipated that this will change, as building Max patches typically starts off slow with more coming out of it later.

With the AI, different systems also require different inputs and pre-processing setup e.g.g having to make communications through OSC. I limited my options to a nntilda external that works all within MAXMSP, and didn't even use another max package, flucoma, in the end.

Later on, when visualising the \textit{output of rave} on an oscilloscope, I accidentally sidetracked into intermodulation (documentation). I stumbled across the idea to distort the frequencies in my memory and started thinking about control systems for the latent space to control the intermodulation frequencies of \textit{sine} waves. This approach led to more nuance changes in RAVE's latent space. However, since the AI is not interpretable, I couldn't think of my composition in the same deterministic way, such as John Chowing's Stria [cite] where FM parameters are evolved over time. Whereas in FM synthesis, as in sampling, an experienced user like myself has a good idea of what will happen when each parameter is changed, with the AI, I didn't have the same affordance -- planning as I usually do felt pointless. I thus handed off control to the AI == I can't control the model and know what it's doing. This shaped the composition. As such, I felt like my composing became an exercise in preparation.

In my patch, I ended up using the same signal that I was using to control RAVE's latent space to control the playback position of a sample. Then I looked at zero crossings of the inter-

modulated signals, and made slower rhythms with this, inspired by an autechre inspired technique \cite{}. I drove a Euclidian sequencer with a clock of the zero crossings, triggering a new FM synth I made. This allowed me to negotiate between the AI and non-AI sounds, where you can decide which to dominate in the improvisation/performance. I added a soft-clipper also to sounds to dominate or not dominate.

Nearing the end, I didn't look for alternatives to how I was going to compose. Although reaching dead-ends, this didn't prompt to try a completely different approach. I was trying to salvage what I can. Had gone so far with this method it didn't feel like it was productive to stop.

I did a 30 minute improvisation with the patch. Adding as I went and recording parts. I made a note of interesting parts of the session, for future use. I was surprised at sounds feeding back into RAVE, and found them to be more workable when bolstered by real sounds. The combination of predictable and unpredictable, semantic and black box, brings a similar level of expectation with pleasant surprise as I had experienced being in jazz ensembles. I regained control over some aspects and there are others over which I must accept I have little.

The compression in the soft clipper also meant I could easily use the balance in the patch to then magnify the RAVE aspects during this sound part. Then when that didn't work, I could bring back in the FM. This was cool and really worked well as a surprise prompt.

For the final piece, I decided to start with a fundamental heavy sound and continued exploring until I made a classic bell sound. I had to re-find preset sounds from explorations when a slight bug arose in my complicated patch. My patch was fragile and I had lost my initial seed position. With the fragility of the latent space and the intermodulation, finding my start point was nigh on impossible. I found this incredibly frustrating. After 20 minutes of playing, I decided to give up on trying to find my original sound, and instead opted to find something new. Letting go of this expectation and welcoming the surprise of the AI again was productive, even fun at times. I really enjoy noise and jamming. It's tough to set up, but I thought that I should do it more often.

For example, some surprises came from the generation of sound outside the audible range of RAVE, as it interfered both with audible sounds and their latent representation. This was surprising. In the future, I would want to explore the impact of other non-audible changes to the latent representation.

P2

Interview: Session 1

R: Please talk me through your composition process and what you did in the session.

P2: Umm, let me just wait. Can you go on it? Uh, yes, so I firstly opened the code.

R: Umm.

P2: Uh, and basically because of how the tool is made, I have to read what's in English? Reinitiate instantiated things, which, because it's a lot of lines of code it took ages, and I was getting them some errors but got through it. Then because I couldn't be.. It's not... I don't remember how to do it... It's my fault.

P2: So I opened the old, uh, projects where I knew that the output of the code was strictly straight going to logic to record cause otherwise I have to change inputs and outputs and don't remember how to do it. So I did that and then, just press play record the whatever it gave me and I think I wrote it in the, uh, Miro whatever its called, that it gives me chord progression and melody.

P2: Umm... Basically it's uhm. There's like a probability that both the melody and the UM chord progressions will change to close modes, so, like if you're in Lydian, it can go to - I don't know - Yeah. Dorian or Aeolian? Or, Something like not like big jumps between phrase anyway.

R: Yep.

P2: Yeah. So press play and recorded continuously for like a minute and 1/2.

R: OK.

P2: Then I Um, Copied and pasted the MIDI output into our new project, so we start fresh and yeah, save the project and then from there, the first thing I did was to split the output into melody, chords and bass, because I find it easier to work like that. And then listen to the single parts again -Uh, like a bit of it and said OK, like maybe I can. I think I split. I took. I took four parts of it. And then cut the MIDI there and then put the rest of the generation like on the side, for later, and and then, yeah, went through it and said, OK, this sounds good. Umm this is what I like because this is what I liked is what can I think I can make with it?

P2: Umm. And then the thing about the first things I did was look at the chords and figure out what chords I was playing, obviously with the MIDI, with the piano roll.

R: Yep.

P2: Uh and then said "Ohh this is a bit boring." If I use an applicator, is it to to in depth well?

R: No, no, it's good. Yeah. Yeah, good. Yeah. Keep going.

P2: Yeh, so try to put an appreciator and like play it with different. Ummm. Urr Options.

R: Is that like an appreciator in Logic, It's like a plug in of sorts?

P2: Sorry.

R: Is that in logic? The appregiator

P2: Yes, if you it's on media effects just underneath the EQ, and so a Logic Plugin Yeah, I can put a screenshot with few on interest as well.

R: If you like, I think it's OK.

P2: Yes, just play around with that and then. Realized that actually part of the reason why the chords sound so shit is because it is quantized to the maximum.

P2: So like when I did the when I wrote the code, it literally is like beat 1. There's like, it's not very human.

R: OK. Yeah.

P2: So what I did is like just try to make it more human. So like not making the chord start exactly on be 1 precise by the millisecond. Um I also added some sustain pedal. Uh, and then that's for the chords, then for the melody, the rhythm was a bit weird uh, but I didn't play with it. Well, I played with it, but I then decided to, I did some stuff and then I was like actually maybe I kind of feel bad wasting what it's done. Uh, so I was like, let me try and like kind of work with it.

R: Yeah.

P2: Then I changed the octave of the melody a little bit to see what it sounds like and then added a, like a counter melody or like harmonies to it. Uh. And then after that I put a cello on to play the bass. Uh and then added some like Reverb to kind of see like do I like this? Is this going the right way and that's where I'm at right now.

R: OK, sounds good. Sounds like a lots of little things. Umm, so next question is to talk with the sticky notes, but I think we talked through someone already.

P2: Yeah. Is there anything you want me to?

R: Let me ask... So, OK, talk to me about this one.

P2: Uh. Yes. Uh. Say as I said like I've used before for a project and it's actually my, one of my favourite compositions I've ever made, um so I know exactly what it sounds like. Also,

because it was for uni coursework, so like I had to listen to it hours on end. Uh, so I know what the output sounded like. I know what the result of the output too was like, so I keep comparing these two now, like is it similar, or like? Does it make sense?

R: Yes, yeah, yeah. Do you feel pressure then, to do as well as the... like a pressure?

P2: Yep. Yeah, because like, that's what it sounds like ah. Also, I'm very out of practice.

R: Yeah.

P2: Is that yeah.

R: OK.

R: And so does this link to this post-it note over here in the reflection on self column.

P2: Uh, yeah, kind of so like. Because what? So what I'm going for, so like the output of my tool right now is not very varied. It's just like chord progressions and melody, like there is a rhythm it, but instrumentation wise whether it might be it just spits out MIDI. So like tends to be repetitive. Um, so yeah, like tho keep comparing it to the other one, which then pushes, not pushes me, but like. I know what I did for the other one and it worked.

P2: So now I'm like and I know I like to write this kind of like ambient music with this output, with this tool. So I'm just like, yeah, basically my brain automatically went there.

R: And so you start off and recorded, here you said, one idea.

P2: Yeah.

R: You're gonna take ideas from that. Was there a reason you decided to do one or?

P2: Uh not really, uh. Actually, yes. Yes, that's my bad. I'm just like thinking a lot.

R: Yeah.

P2: Yes, because how the tool works is that. Uh, basically, the probability of changing from 1 mode to the other is based on what mode you're in at the moment, so it's like very continuous thing. And if I record one idea and then record another if I wanted to continue, like I'm doing now, which is trying to keep the output as, close as to what actually was output. But put this what I don't know, but the two? Umm. Then like it might not match and it might sound like shit, but maybe we got something I can try in the next session. Re-record something and see like if I can use it.

R: Yeah. And that's because you'd have to. So if you wanted to change the mode, you'd have to set it in the tool and then record that bit again. Am I right?

P2: Uh, no. Basically, it's all stochastic, so it kind of does his own thing. I just said the probability. I don't know 30% probability you can go to this mode if you are in this mode right now. Kind of thing.

R: Yeah. OK.

R: Cool. OK. And then you feel bad wasting stuff the system wrote?

P2: Yeah.

R: Please elaborate.

P2: Ah yes, as I was saying. Like I'm trying to. I don't know why, but like just how my brain is working with this right now and in my previous composition because the outputs like so continuous - I cut the MIDI and then like just discard parts of it I kind of feel bad or like. So for example, for change the core progression I'm like and are you really using what the system is made? Or am I really like ohh, I'd just like taking over and be like, no, no. What you do this shit. Let me let me fix it kind of thing. Do you know what I mean? So I feel bad changing too much of what its done.

R: OK.

P2: Umm yeah.

R: Yeah, I'm wondering why. I'm thinking, why feel bad?

P2: Umm, because I think it's because I'm not... I feel like I'm not making use of the tool to it's like potential If you know what I mean, like if I'm going to change most of the things it gave me, is it not? I Might as well just have written the whole thing myself. Kind of.

R: Yep. Yeah. OK. OK, cool. OK, so did anything that stood out as very important or was very surprising when you were writing.

P2: Anything, sorry.

R: There was anything. Did it stand out as? Did anything stand out as super important? Or, umm, surprising.

P2: Um in what sense? Like to me like what I'm writing or just about the process.

R: I'm to you how it felt to you, I guess.

P2: To me. Um. Important, I guess, like as I said, I haven't really written music inside my PHD also because my Mac is piece of junk. So I kind of missed it. Like I keep saying to myself. Ohh yeah, I should write music or she worked music and then I'm like, oh, I'm so out of practice. I don't know what to do. I don't know what to write and then maybe like this kind of like help

me because like I'm not I'm writing, I'm writing the music but then creates like it's kind of helping me. So I feel less pressure.

R: Yeah. Cool.

P2: Does that make sense.

R: Yeah, that's good. And so if you have to summarize what you just did in your session in one word. What would you do for?

P2: Planning.

R: Cool.

Interview: Session 2

R: OK, so please talk me through your composition process and what you did in the session.

P2: This session I.... I went back to what I did in the first session. Umm and I started kind of like layering stuff. Umm. And just making more into... making it less of a draft. Um making it sound a bit more? In a direction that I want it to go. Make sense?

R: Yep.

P2: Uh, so yeah, just like playing with different instruments, playing with. Um, like the effects and stuff like this, just to see what will work. Umm. And then I added a thing like a few seconds after using the core progression that the system generated but not the melody. Umm yeah?

R: OK, cool. So it was more about. Making it, uh

P2: Refining it, kinda,

R: Yeah yeah. OK cool. So. Now, it's just I'm please talk me through the reflections you've written in Miro.

P2: The all of them?

R: Why not?

P2: Sounds fun.

R: Or, we could pick out the most interesting ones?

P2: No its alright, I can, if its helpful I can go through all of them.

R: Yeah. Yeah, we'll blast through. See if anything comes to me from it.

P2: Yeah. So yeah, as I said, I experimented a bit more with the generative material. So like I kind of took a less, let's say linear approach. So instead of using exactly the melody and exactly the chord progression at this point in time like I took the chords from this bit and the melody from this other bit and I kind of make them work together. Or just used the chord progression. So like kind of a bit more. Yeah. Let's say I don't know how to describe it and then yeah, as I said, I played around the instruments that I could use so went through all my libraries. Took 10 hours to load each instrument, but we live with that.

P2: Umm. And they're just, like, went through all of, for example, I was looking for a synth part to put underneath, part, and I would play a note ... makes nah don't the like that, next one nooo... yeah this could this could work well if I add this effect kind of thing. So kind of like, I just played around and saw what works? What I liked, what I didn't like.

P2: Then the second column is, yeah, as I said, like just tried to be less linear with how I use it, but I did not generate, you alright?.

R: Yes. Yeah I'm just agreeing.

P2: Yeah, I just yeah I didn't generate anymore, anymore stuff. I'm just using it slightly different. Which I feel like... You can use it, It gives you a lot more options, umm.

R: And so it was more natural and you enjoyed the process a lot more?

P2: Yeah, because I said like I have more options and like it's it's it seems similar to like if my system was spitting out small phrases that I can take and use. So like instead of its spitting it out small phrases I'm taking. I'm making small phrases out of it. Um kind of thing. Um this just felt a lot more natural because this is like how I would write anyway.

P2: Uh. Which then brings into the next reflection-on-self. Yeah, like it seems that I prefer this way. That it makes you feel more, free to create stuff and less like restricted to what the tool was? Umm. Oh my god its so small, oh yes. And then like this then allowed me to. Kind of like shift style it, you know how I was saying that because of I used this before and I wrote a piece of music.

R: Yep.

P2: Umm my brain was kind of automatically going in the same way because the output from the system was similar like different notes, but because of how my system is built it was just very similar.

P2: So it was like, uh, yeah, I'll do this and I'll do that one because I'm taking smaller chunks and like kind of like dividing them and using it more... not creatively, just like a little bit more freedom let's say. Umm.

P2: My brain's like ohh. Maybe we can go in this direction. Maybe like if if I was any good, at writing election music, I could say I'm. Let me put this chords through a synth and like see how this sounds so like. Basically, yeah. Helped me shift style and then yeah, and it's a surprising thing, I guess I knew it. But it's really interesting to, kind of see

R: Yeah.

P2: Just see how my brain works when I compose cause I have- haven't done anything, just kind of forgot and I thinking about it now when you ask me to reflect on it. Umm, I was only added like an extra maybe like 10 seconds to the, the 30 seconds I already had, so it's it's small chunks and I seem like I don't write for example I don't write the whole chord progression for the minute I'm supposed to write for and then go back to it. I write in smaller chunks, so like full bars at a time or something like that - and then trying to lay it out refine that and then move onto the next session section. Does that make sense?

R: Yes. Yep. Umm that, yeah.

[INTERRUPTING]

R: I want to ask you about the composition buddy.

P2: Yeah, it's like. I don't know if you're allowed to say in the study that I'm doing a PhD, but I.

R: Yes. Yeah, yeah, yeah.

P2: So like this whole thing of like, oh, you AI is an artist and I blah blah blah all this kind of stuff. Like, if I use it as these people would like me to use it. So I just press play comes up with something and use that as it is like I was trying to do in the first half. Umm, it's just a support for my brain and finally really hard to compose and come up with something original when if I use it as a composition Buddy, umm yeah, it's more like co-creating with a friend kind of thing. Umm yeah.

R: So I am right in saying though you started off with all the stuff you generated from the last session and just chopped it up. You didn't generate new things.

P2: No, nothing.

R: Yep. OK, cool. So then how is it? Is it buddy in the sense of it gave you the ideas upfront or I don't know?

P2: What? What do I mean by buddy?

R: Yep

P2: Yeah. Just like. Umm. Like a co-author, like when you're writing a paper. We might use the same document and like you write something or like some bullet points

and then I'm like ohh actually that's a good idea. Let me like expand on that or let me rewrite what you've what you brought and stuff like this like, it's collaborative.

R: Yes, I see.

P2: Yeah.

R: OK, cool. And I think you really talked about things that were surprising and all this kind of thing.

P2: Yes.

R: Yep. OK. Uh, if you had to summarize it in one word.

P2: Ohh. Uh, probably layering.

Interview: Session 3

R: Please, please talk me through your composition process and what you did in the session.

P2: So, I just, I'm answering your future question. If the session could be um summarized in one word it would be beefing it up.

R: Beefing?

P2: Beefing one word plus sentence. Yeah, beefing it up or like just like.

R: Yep.

P2: Umm yes, because I had lots of instruments. I started. This time I went forwards with the composition, so like worked on the next session section and I know what I want to do next. Yeah. So that's basically what I did. I kept in my head more of an idea what I wanted to do. Uh, so I had to try a try and like, play around and see what happens, less kind of thing.

R: Yep.

P2: Umm. Just looking for things like Oh no I wanna use strings, so I need to find some strings and then I think I know what I want to do, But then I still have the experimentations like ohh what if I use the melody from the system, but then I make a counter melody on top. How do they sound as played, synths, blah blah blah, kind of like that? Yeah.

R: Yep. OK. Yeah, that all sounds good. OK, so please talk me through the post it notes.

P2: Yes, let me zoom in. Uh, yes. Yeah. First one, the black one, yep, I am finding the you know as I go forwards with the composition – not just like in time like I've written the next 30 seconds or whatever - just like as time passes and I've been working on it for a bit and now I seem to be like more confident in my ideas and also more consistent in like knowing

what I want to achieve. Umm and like I will always, as I said like, think of other ways of doing it like there's a tiny bit of experimentation, but like in this point of the process, I kind of feel like it happens a lot less.

R: Because your just sort of building ideas and not so much? you sort of converged on something that you want to go forward with, right?

P2: Yeah. Yeah, like I have an idea of what I want to do now, and like a some sort of plan like this kind of like. Developing itself, if you know what I mean? Like I'm I'm developing it but like I now find find what works in like the because of the instruments I'm using kind of has to go in a certain direction and stuff like that. Yeah. And then the second bit, because of the nature of the composition, I'm kind of writing at the moment, which is like more towards like film music. I didn't generate any material and like I'm tending to reuse the same material because of, like, I will speak about the process later - but the whole like motive stuff. So, like, I've taken a melody from it, or a couple of melodies, and then I'm like, oh, this sounds good. And I like. How can I now change it to kind of tell the story but the music?

P2: Umm. So yeah, and therefore no new generating material and I'm using even less of like the generated material that I haven't used yet - does that make sense?

R: Umm Yep.

P2: Umm. Then reflection-on-self. Umm yeah, I need something that like, surprised or it's meaningful to me. Yeah, like maybe it's because I'm using this system, or maybe it's just because this is the first-time I was doing it in years, literally. Like it's just made me miss it and like, this is actually fun

R: What makes you think that maybe it's the use of the AI?

P2: Um because, I go into it in the next post-it, so I could kind of like talk about both.

R: Okay

P2: Yeah, because like using generated material kind of like makes me feel less pressure on writing something that actually makes sense that makes them, this sounds good because. Umm, when I usually write for for film like I have. I'm very hard myself when, like it's really hard sometimes to understand what.. the scene needs, Or like kind of leitmotif to to wirte and this kind of stuff. Right? But because I have no media at the moment to write for, I'm just writing because umm. And also because I think I didn't write the leitmotifs. So, like, there's a lot less pressure on, like writing something that sounds good to like really, really high standards. And just like, yeah, this is fun. Like uh? Yeah. As I said, like in the post-it note I feel like I'm just taking someone else's building blocks and kind of like rearranging them into something that works. Uh, yeah.

R: Umm. Feels like a game?

P2: Sorry.

P2: Ohh shit I didn't see that. Yeah. I'm like really zoomed in. Yeah so like it kind of feels, yeah, more like a game. And like it's taking away a lot of the stress. Umm, because as I say you kind of have these building blocks that something else. Uh Wrote. And you're trying to like, yeah, like, you know, like a bunch of Lego. And you're like, how can I make them to get? How can I put them together to make? I don't know a tower or a car. I don't know what you can make with Lego but you know what I mean?

R: And so when you wrote music before was having to generate the material in the 1st place a particularly stressful part?

P2: Sorry. Can you repeat?

R: So when you- before, when you write music without like, umm, without AI, would the material generation be stressful or?

P2: When I wrote music without AI?

R: Yes, I guess you'd come up with your motives and things right? So.

P2: Ohh yeah yeah. So before like just writing. Writing was like, really stressful. Like I found it really stressful because. Yeah, like there's only a certain amount of notes. And there you're stressed like they probably all the combinations have already been used like you are obviously gonna write something that someone else already wrote – no point in trying to be novel. But also like if you go to write the same melody as So I don't know John Williams. John Williams can do it 4000 times better, kinda like a like, just very demoralizing writing anyway. For Film especially. Because there are some kind of like recipes that work. Yeah. And it's just hard sometimes, man. Yeah.

R: Yeah. So, so these purple ones, and so all in this like reflection on self-kind of thing.

P2: Sorry?

R: These purple post it notes are I'm in the reflection-on-self. So I'm wondering how did you know? Thinking about using the AI and how you used it, how does that relate then to like your personal experience, you know?

P2: Umm yeah, it's the fact that, kinda made me enjoy it again and like, get into it again without stress of uh, well I suck. I haven't done this in ages. I have forgotten how to even how to use logic to be honest then. Uh, just like this kind of stuff, because again, I'm approaching it more, like some sort of not game. I'm not saying it's not serious. I'm just saying, like there's less pressure.

R: Yeah. OK, cool. And then these last couple.

P2: Last couple. Uh, yeah. I'm just like, really like. Using this idea of leitmotif, so like using the generative melody that I used the beginning and changing it slightly as I go alone. Like I

I'm along - adding instruments or moving some, maybe changing some notes here and there and stuff like this. Uh, and once again, this whole composition cutting thing because. Like and. Right now I'm kind of using it like. Well, I have used it now that I'm at this point I can say like I used it as a leitmotif generator or like, so starting point, and then from there I just kind of, yeah.

R: Yes, yes, I see.

P2: Yeah.

R: OK. Anything surprising or super important that happened.

P2: Uh, yeah, I mean. So much less stress. It used to be a kind of like love hate thing for composition. Like yeah, it used to be part of like, my job and stuff like this, but.

R: Yeah.

P2: I dunno.. Just just have the removal to the pressure. That's like, it's quite surprising to me because the the only time I would just the system works for coursework. So again, there was pressure on me to, like, do something for marks so, yeah.

R: Cool. We did our word it was beefing.

P2: Beefing.

R: Beefing. So, OK, cool.

Interview: Session 4 & Post-Task

R: So please talk me through your composition process and what you did.

P2: Yeah. Let me get my Miro. Yeah, this time it was. I managed to get the length, uh and. Nice sound. A and then I did. Some refining. Uh. Added instruments, so it was like what I did in the last two sessions, but like times 40. And I also added some automation to kind of you know - a very quick mix, uh and like to not make it sound so flat. Um And then, yeah, more of what I did before, so like taking the melody and like kind of developing it. Umm. And then used some chords from the... previously generated stuff. Yeah.

R: OK, so talk me through the post-it notes. These questions are so.

P2: Yeah. Like I'm doing most of the work here ANONYMISED. Yeah, so the first one? Umm. Yeah, like I didn't re-examine what I'd learned but started to, like, find different ways of doing things. Ohh. I misspelt that wait. There you go.

R: Yep.

P2: But more like now I know what I've learned and like I know what is working. So how can I use that to my advantage? Kind of kind of thing and then this process in general like the last session, last hour session was fairly straightforward and like because I knew what I wanted to do.

R: Yep.

P2: Sorry and uh how to possibly achieve that so it's just kind of like try to head away and see what happened.

R: Yep.

P2: But there were still a lot of experimentation. So like if I did something and then it didn't work, I would like scrap it and start again or like try to think why it was working. So for example, I give later a an example like a melody, but like it was too low in the frequencies like the cello when I already had heavy bass. So I didn't want do that like this to like bassy, I need something in the higher strings blah blah blah and stuff like that.

R: Yeah, that sounds good. Uh, nothing new from the AI.

P2: No.

R: Uh, you... some other melodies from the generated material.

P2: Yep

R: OK. But you went and found them.

P2: Sorry.

R: That you went and found them in the thing you generated at the start, right?

P2: Yeah, just from from before because I have like a minute of MIDI. So it's kind of went in there and looked for stuff that was alright.

R: Yeah, lots of experimentation. OK, so this is the most interesting stuff. The stuff in or, to me, at least, stuff in green.

P2: Yeah, do you want me to talk about that.

R: Yeah, please.

P2: Uh, so yeah. Like this whole process, kind of like made me think of my education because, yeah, I have been doing composition for quite a long time now and. Yeah, before starting, as like oh man knew, I completely forgot how to do it. Do I even know how to play piano anymore? Like because I composing the keyboard.

R: Yep.

P2: Uh. Stuff like this, like all this stuff we learned, like, do I remember it? But then, like once I started. Writing first of all, that didn't matter anymore. I was just doing and then it came automatically. So like if I had the melody I straight away knew what chords went with it and just like automatically getting back to - not to where I was because obviously like I've probably lost some practice, but umm yeah, just like think it looks like it looks like it seems like he came back automatically little bit. But then like using the system my Markov stuff. Kinda I get given an opportunity like explore new stuff because - as I said before I know my style of uh music. But. I also know what kind of melodies are like writing because this melody was generated, so it kind of forced me to go in a way then maybe I would not have explored before.

R: OK. And you hate drum programming?

P2: It's terrible. Yep, I suck at it. Umm. Uh. And then yeah, I guess like the old last orange thing is kind of made me realize that there are things I'm comfortable with and things are really not comfortable with. And this really affects the affects the end result, because if I was good at programming drums, maybe I would explore other genres as well, like electronic stuff. And where drums like more permanent, like you cannot avoid it really.

R: Yep, Yep, yeah.

P2: Yeah. but because I hate programming drums I kind of like no, no, never writing that or like it makes me scared of writing of trying to write that.

R: Yeah. And so do you think that's then? Where the AI should help is where you're most scared of doing stuff or?

P2: That would be good. Yeah. As I was saying, like if I have. Something that kind of like helps me with the parts that I'm least comfortable with. Then that will make me more comfortable in, yeah, exploring all the genres first of all, but also within the composition. Like to go another direction then? That maybe I could not have gone in.

R: Yes.

P2: Yes. Yeah.

R: Yeah.

To post task:

R: OK, so I'm now thinking about like the whole reflection thing of putting in screenshots using post-it notes all this kind of stuff. Umm do you feel that it helped your umm helped to improve your creative practice at all?

P2: Uh. The screenshots? Not so much. But the Miro thing? Yeah, because. I I guess it's very. At least for me, but I know for many people is like composing is kind of like an like in the intuitive process, so you don't really sit there, sit down and think, right. I'm going. I'm gonna write in A minor and then I'm gonna go to D major. I don't know. Something like that. You just kind of do, uh. So having being, let's say forced but not in a bad way to write down and kind of think about your process, it's really interesting and again like kind of made me understand how my brain works when I'm composing. Uh. Yeah.

R: OK. And so did you. Find any unexpected things because you had to stop and think and come up with things. Did you change things in the piece maybe or. Maybe learn something I don't know.

P2: Yeah, I mean I I learn that I'd like to write in small sections and and that I. Like, yeah can how? How my brain works when it comes to composing. Uh, like I never. Really thought. Of my step to step process like I just again I just kind of do and then I'm like ohh OK first I do this and then usually I do this so like how can I - like is this working for me? Is like does it make sense like reflecting on it, just helping me maybe finding better ways of doing things.

R: Yep, OK Yep. Any suggestions for how old the process could be improved?

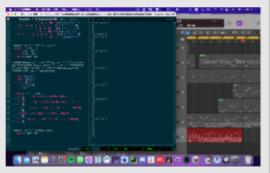
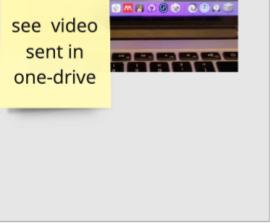
P2: Uh. To me it was like quite subjective. When you say you know and any screenshots of like important moments because, yeah, for me, like an important moment maybe was a orchestrating concern one is actually writing the parts and stuff like that. So yeah.

R: Yeah. Yeah. OK. Anything else you wanna tell me?

P2: No.

Miro: Session 1

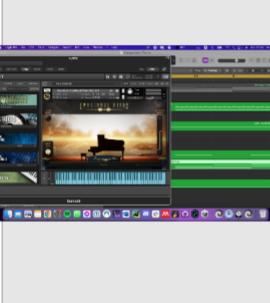
Reflection 1:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
     see video sent in one-drive	<p>The tool gives me a chord progression and melody. Click play and it just keeps going. The melody and chords can switch to different modes.</p> <p>I found that I kept playing with the melody that the system generated. I split the generated piece into melody, chords and bass so that it would be easier to modify.</p> <p>I tried different instruments and tried different approaches to changing the melody. For instance, I tried changing the rhythm was a bit weird so I changed that, but then thought maybe I can make it work and make it sound particular</p>	<p>This session I only generated one "idea". It's a track that lasts over a minute and I am taking bits of it to incorporate into my composition</p> <p>However, I have composed with this tool before and I remember what it generated very well. Not in a crazy amount of detail but I know what I ended up making with it. So I keep comparing it to that</p>	<p>Maybe more a consolidation of my expectations? I already knew what kind of music I like to write. Once I recorded the code output, I was immediately "ah yes that's exactly where I want to go". Surprise surprise, it's exactly the type of music I always write, just less dramatic, for now.</p> <p>Yeah, it's interesting working with generated content/material. I feel bad "wasting" stuff that my system wrote, or changing it.</p>

miro

Miro: Session 2

Reflection 2:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
  <p>Yes. This session I experimented more with the generated material</p> <p>Also played around with what instruments i can use</p>	<p>I kept the same generated material, just decided to be less "linear" with how I use it.</p> <p>This felt a lot more natural and I enjoyed the process a lot more</p>	<p>It seems like I prefer when I have creative freedom to use the content however I want, in a less linear way.</p> <p>I found that this (^see top^) allowed me shift the style of composition a little bit and go from ambient to more film-music, LOTR things. Which I also like. But I found more creative freedom this way</p> <p>It seems I like to finish section by section rather than writing a long draft then going back to it</p>	<p>Finding it really fun to compose using my system's material and building on it</p> <p>it's great to kind of see and remember how much you can do with a melody and chord progression</p> <p>forever using it as a composition buddy than the system doing everything for me</p>

miro

Miro: Session 3

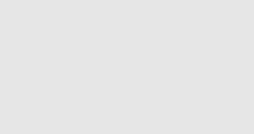
Reflection 3:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
 	<p>Now I am finding a direction that I am going in, I seem to be more confident of my ideas. I will always think of other ways of doing it, but at this point in the process I feel like it happens less</p> <p>Because of the nature of my composition (kinda going film music side), I "have" to reuse the same material (e.g. using leitmotif variations and repetitions)</p> <p>No new generated material, using less and less of the previously generated material now that I have a few motifs to use and chord progressions</p>	<p>Maybe it's the use of AI, maybe it's just the fact that I am doing it for the first time in ages, but it has made me want to write music again</p> <p>Using generated material once more helped me feel more secure in making something "good". I feel like I am just using building blocks someone else made and reorganising them in a way that imo works</p> <p>Kinda feels more like a game than a task or something difficult/stressful</p>	<p>Really banging on the use of leitmotif. Using the generated melody from the beginning and changing it slightly</p> <p>Once again, composition buddy. Using it as a starting point but also as leitmotif generator seems like</p>

miro

Miro: Session 4

Reflection 4:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
  	<p>Not necessarily to find alternative ways, just re-examining what I have learnt and to see how I can use what I have learnt to my advantage</p> <p>It was "straightforward" in the sense that now I had a clear understanding of what I want to achieve so I just tried to head that way.</p> <p>Still did lots of "nah let's do this again" or "No this does not work, let's do something else"</p>	<p>Like before, no new generations from the AI. Used some other melodies from the previously generated material. Mainly used them as leitmotifs</p> <p>Lots of experimentation went on though, from "hey what kind of melody works here" to "no this is too bass-heavy, I need a melody in higher frequencies"</p> <p>I found that using my system gave me an opportunity to explore new stuff that I have not done before</p>	<p>Yeah, kinda reflected on my education a little bit. I have been doing composition for a long time and kinda forgot how to now.</p> <p>But it seems that some stuff never fades from memory; it kind becomes automatic at some point</p> <p>I hate programming drums, I should have used an AI for that</p> <p>There are things I am comfortable doing and things I am less comfortable with (e.g. drums) so I tend to avoid using them</p>

miro

First-Person Account (Unedited First-Draft)

The first thing to note was the difficulty in opening the project. SuperCollider requires to instantiate all the functions one by one, and I was getting errors when doing that even know the code works and it has not been changed. Furthermore, I decided to use the original logic project to record the generated material as if I tried to record the tool output in a new logic project, I would have had to change things in both logic and supercollider and I sincerely do not remember how to.

The generated material was boring in terms of vertical structure: the chords where just in root position, held for the whole bar duration, and the melody was on top. This can suit itself for more ambient music but it is kind of restraining. Because the chords were so boring, I decided to use Logic's MIDI FX Arpeggiator to kinda make up for the chords being boring and too quantised – not human at all. This ended up being scrapped as it did not sound natural even with the arpeggiator, and instead I re-recorded the chords myself using my keyboard and putting in some strings instead of piano.

The generated melody was a bit hard to work with because it had weird rhythms, and it wasn't always consistent. I programmed it so that it wouldn't have big jumps, but then it kind of sounded a bit repetitive. So I changed the rhythm in the piano roll to make it a bit less weird. However, at first I felt really bad changing the stuff that my system created. I was trying to use it as linearly as possible; I did not want to just take some chords here and there or some parts of the melody – I wanted to use all of it so it did not go to waste. Because of the type of output that my tool gives (continuously spitting out midi based on what was generated the bar before), taking chords from different parts of the output and try to paste them together might not have worked as nicely because there is a chance the chords could be in a different key. Also, I had the thought that if I kept changing what the system output, was I really using it to its full potential or was I just taking over?

Something interesting that happened is the comparison that my brain kept making with the project I previously wrote using this tool. Because it was for university coursework and had to be composed, mixed and mastered, I spent a long time listening to it to perfect those things. So I knew exactly what it sounds like. However, after the first session, I decided to try and use the system less linearly. So I would take small chunks of the output and try to make them work together. Either take the melody and write the chords myself, or take the chords and write the melody myself, or a bit of both. Or maybe keep both. This really helped take off the pressure first of all, but also it naturally allowed the composition to go in a different direction than what the previously written song that I kept comparing it to, so once more, less pressure. I felt more free to write whatever I wanted and use the generated material as small building blocks. I can take some of them and incorporate them into the piece, or I can maybe discard some, or change some stuff within them. It felt like I was collaborating with another composer, where there is this sort of communication. Interestingly, using the generated material felt more like a game and gave me more freedom, more enjoyment and less pressure. It felt like I had some lego blocks, what can I make with them? If I don't like the result, I can try make something else with them by re-arranging them or maybe changing them.

Writing for music can be tough, especially when you are aware of huge composers' work like John Williams. There is a set amount of notes in existence, the melody I am about to write has probably been written before. So then you compare yourself with big people like John Williams and think, well if I am going for a similar style as his, I cannot even get close to the quality of his compositions. It can get very demoralising. In film there are recipes that work, ways in which composers represent certain emotions through music and so on that are just known to work. So it adds a lot of pressure.

The system felt like a composition buddy! As I previously said, I really enjoyed this. It felt like we were composing together and because I did not write all the material, it took the pressure off in thinking "is this melody I wrote bad?". I did not write that. But what I can do, is say hey I took this generate melody and made it work within the composition which I feel is a skill in itself.

P3 & P4

Interview: Session 1

R: OK Umm talk me through your composition process and what you did in a session.

P3: Yeah, sure. So we just basically started by writing a riff. Uh, just like a basic little riff. And from there we converted it into symbolic format and Guitar Pro. Umm, we basically just tap it out manually and then we fed that into our AI system and generated a bunch of like variations on that. And then we basically just listen through them and those kind of inspired new ideas. And then take those ideas and put them into this song.

R: OK.

P3: Our general idea of.

R: So do you bounce it out from the tab to some sort of audio format or MIDI is that?

P3: No, no, no.

P4: No. We're just tapped it manually.

P3: We could, but honestly, I'm faster. Just writing the parts myself in MIDI or and like I wanna record the actual guitar. So, like, I'll just, I'll just learn the riff really quick and then record it and I could export all this stuff to MIDI, but it's literally faster for me to just do it myself.

R: OK. And so how did you divide up the tasks between the two of you? Because you said to us earlier, but I forgotten.

P4: Yeah. So P3 came up with this initial riff. Umm. I tabbed it out on, fed it into the model, got some output, and while I was trying some other ideas and prompting the model with some further explorative ideas, P3 was importing the initial steps into the DAW, creating the project, recording some stuff, and I was more on this side of getting new little ideas from whatever the AI model got from and prompting it again. And so that's that's pretty much how we divide it. P3 was recording and working on the DAW and I was trying to get new ideas from the the AI model- and we we would like cross each other every time. I thought there was something worth checking. We would stop and just have a listen.

P3: I should say we didn't get super far into it like we don't have too many of the AI ideas into the Song yet, so that will probably be the next session.

R: So. So you mean you're- theres still ideas to come or is this mostly the idea making done?

P3: But there there will be much more.

P4: Yeah, there's a lot of stuff that we just generated and want to import to the DAW now. So the first step was like, you know, getting the initial steps of the Song towards the more AI driven part

P3: Yeah, I wrote like an intro and made some drum parts and like recorded. Umm yeah.

R: Yeah, but so that's mostly your ideas then at the moment that you're gonna.

P3: There are some AI ideas in there, and then the next ones will probably be AI ideas. But the idea is like, you know, stuff that we come up with, but augmented by AI to push us a to new ideas. And we've already got new ideas for like Song structure and stuff, just based on the ideas that we've generated. So we're going to do that.

R: OK, cool. So talk me through the reflections and post it notes that you've written.

P3: Uh, yeah. I mean, most of it was like just describing what we did because we didn't do a ton of, like reflections on our process because like I said or like Pedro said, this was a lot of like the past hour was like figuring out the initial idea and then like, the kind of grinding through recording the first parts. So we like, we need to get stuff into the DAW before we can kind of start rearranging things and like rethinking stuff. Umm. So like there wasn't that kind of stuff we like really were able. We we didn't really have time to, like reflect on the process too much over the past hour, cause there's literally just like busy work.

R: And so this is the only- the only thing to say here is that you um had some ideas that you wouldn't have considered otherwise? Umm. And so you've put this sticky note here in the process, is that- what's your thinking behind this?

P3: Which one?

R: This guy. Yeah, yeah.

P4: Yeah. OK. So that that's because. So after the first batch of generated tabs, we got this section of the full song in our head, inspired by some of the sections that weren't in some of the generated parts. So that's what we were trying to say with this. So whatever came out of the AI actually, despite not being at this stage in the DAW, we actually molded the whole section. The whole structure of the song. So we were working towards fitting those sections that were like, that were AI generated, in the song and making the Song lead into those sections.

R: OK, so so it did give you a sort of direction that the overall structure

P4: Definetly yes

R: OK, umm, so this one over here. I'm looking down. Session didn't do much iterative refinement. I think you've said these kinds of things actually, yes.

P3: Yeah

P4: Yeah, exactly that.

P4: So that's probably the next uh, I mean I I I we already generated that. So in a way, we did do that, but we not to a point where we're lik- listening to to those together and deciding now, if we go with one or the other and and using it in the DAW,

P3: there was like reflection within the AI generated stuff, but not between the two because like, it takes time to build out, build the Song out in the DAW. So like we need to build more of it out before we can really start going back and forth and like thinking about stuff.

R: Yeah. OK. Cool. Anything that stood out as really important or surprising, maybe?

P4: The model works like a Charm.

P3: Yeah. Yeah, like we already knew, it worked well. Like we wrote a whole paper about how sick it was, and it still surprising us.

P4: Yeah, like it's really sick riffs.

R: OK, cool. Umm, OK. So if you have to summarize the error in one word, what word would you choose?

P4: Hectic. Ground word.

R: OK. That sounds cool.

Interview: Session 2

R: Umm, please talk me through your composition process and what you did in this session.

P4: Well, so once more, now that we had a few more generated riffs and material, we curated most of them. So like the song was at a step where we felt like the major contributions from the AI were ready to be taken in, and that's what we did. So we mostly recorded and imported a bunch of riffs that we have generated with the model before. Uh we kind of glued them together, although we're still working on that part as well. Umm and once that was done so guitars, bass, drums more or less recorded, we started experimenting a little bit in terms of layers.

R: OK.

P4: So that prompted the discovery or the usage of some samples that we usually wouldn't use.

R: Yep.

P4: Some leads. Yeah, pretty much that.

R: OK, all sounds good. So at start, you kind of what the ideas were done. You pulled them together and then at the end did some more experiments. Because there was time to do so. Right?

P4: Yeah, I guess we were, yeah.

R: Yeah, I think that sounds right. OK. Umm, so talk me through the different reflections and post it notes.

P4: Alright, waht we have here.

P3: First ones are pretty like the same thing we're talking about earlier, just like generating. Umm. Generating new riffs, taking the generated riffs that we liked, and then feeding them back into the system and generating even more and just kind of getting a collection of like ideas that we liked and that were inspiring us. Um and then we ended up recording a couple of them into the DAW.

R: And so this post-it note, so there's this thing again of the I gave you suggestions you might have not thought of otherwise.

P4: Yes, definitely.

P3: It's kind of thing, Yep.

P4: Definitely.

P3: Yeah. And we also like there was one where we kind of changed the riff around a bunch to make it more interesting, cause its a bit boring before. But it was like a nice idea. It's just like it wasn't all the way there. So we had to, like, take it all the way there ourselves.

R: Yeah.

P3: Umm, what else? What else do we have?

R: This is interesting this one here.

P3: Yeah, that ones...

P4: Yeah, well, then there was a particular riff I was not very comfortable to play, at least exactly like it was in the tab. So that kind of made me think a little bit about either, how can I change the riff to fit my play, my playing style or or the other way around which eventually happened um, which was just practicing a little bit more.

R: And so. Umm. When you have to try and make these things fit more to your style, what particular decisions are you making, or what, you know what kind of things you're thinking about?

P4: Umm, so you know, either either change what would otherwise be a pick note into some legato type of hammer on stuff, sometimes changing the the strings where the riff is played. If it's all in the same string, maybe I don't know because of the picking pattern being a bit tricky. You just change the shape of the riff so that it is more comfortable. Things like that.

R: And so you just make those decisions just by playing, right?

P4: Yep. I try to stick to whatever the AI is outputting as close as possible, so I don't think it's a big problem if you do play the same notes in the same riff in a slightly different way. Because I guess that's very common in, you know, learning music and stuff. Ohh, but most of the times I it's not that the riffs are impossible to play or anything like that, they're pretty. It's just a personal choice of fingering.

R: OK, cool. So I will ask about this. Stuff over here, something about drum loops.

P4: Uh. Which one?

P3: Oh, yeah, it's like, I don't know, they had a one of the one of the generated riffs had this like, what was it? The Amen beat.

P4: Amen Break.

R: OK. Yeah.

P3: Break like hit hat thing and so then I had the ideas. Like what if I just got like a like? So I like I I I made the beat with like the drum samples that I use. Umm. Uh, like I I I programmed it with MIDI, but I was like it'd also be sick if we just got like a loop of someone playing that on like an acoustic drum. So we ended up getting like here, let me play this loop.

P3: You hear them alright?

R: No, no. Possibly teams is doing background noise cancelling or something.

P3: Never mind whatever. But regardless, we I don't know, it was just like added this like interesting layer into it that we threw in and it's made it sound really cool. Umm, yeah, that's that's all it is.

R: OK, cool. And then so these two at the bottom here are sort of about, so it says you tend to talk to the computer and record parts yourself and then you start to give P4 more chance to do stuff.

P3: Ohh yeah, that's just my cause. I'm like the I don't know. I've done a lot more production.

P4: Yeah

P3: I know they're like system better, but then that kind of leads to me wanting to just, like, record everything myself and just go through it cause like... I'll have an idea and I know exactly what I wanna do and I just wanna do it. Umm, so yeah, I was thinking I need to get P4 a chance to shine.

P4: Let's go!

R: And so does this make sense with this thing over here? Right? Where you say you sort of changed how you were dividing the work, right?

P4: Yeah. Exactly.

P3: Because originally P4s finding all the ideas and I was like recording everything. But then it started to become like we had our ideas. So now we could talk more together about it and then we started to like both kind of just work on this. Although it was still me like using the computer, just because I know the system.

P4: Yeah, you better. Just better, yeah.

R: But yet I see. I see what you're saying. OK, cool. Anything surprising that happened or anything that seemed really important.

P3: No.

R: No?

P4: So we we we might have some questions for you now actually regarding the next steps cause. So we feel like we we are at the point where we have enough AI generated content. So probably the next session would be more of a straightforward traditional US, humans working in the DAW and, you know bridging, is that OK? Is that a problem.

R: Yes. Yeah, that's fine.

P3: Is it okay if I generated some CHAT-GPT lyrics, so might like sing some of them.

R: OK. Yeah. Yeah, that sounds fine with me. Nice. OK. A one word summary of your last hour.

P4: Proof.

P3: Experimenting.

Interview: Session 3

R: So what did you do in the last hour?

P4: Um reassessment of whatever we have, uh the whole bridging, the sections that we want that, we want it. So make it more consistent and then add layers and layers of lead guitars and orchestral parts. Uh, that was mostly it. That was mostly it. We spent a lot of time, you know, trying around melodic ideas, um listening to some samples, trying some VSTs. It was more of a curation slash enrichment process then it was of a creation or getting new sections in, I guess.

R: So is this orchestral layer thing something you set out to do before you started or?

P4: Umm, no, no. That was actually, so I think at some point you asked us to reflect on our personal experiences and that kind of makes sense. So most of those orchestral parts came from us discussing bands and songs from bands that we like, where they do some sort of, you know, extra orchestral layers on top of something. And we thought, well, might just give it a try, but it's not a common thing that we do.

R: No.

P4: So one could say or or no?

P3: Actually I do it, but I wasn't planning to particularly do it. There's more, just like it's. We felt like it would be cool in a section, and so we did it. But I wouldn't say regardless of this or just like any time of writing, music out usually go into it with like a specific goal of just like I'm going to use these sounds or something like that. It's more just like whatever happens and then like the sounds inspire other sounds and stuff, and it's like, I don't know. I feel like it's more like discovering the song rather than writing it, and I think that's what's happening here.

R: And so is this some in any way thanks to the AI or?

P3: It's part of that.

P4: Yeah

P3: We didn't really use the AI system and at this point, because it the AI inspired all the initial ideas and we're just kind of jumping off of that and making them, from ideas into like actual like recording parts.

R: And so I'm, you know, where those ideas, you know, did you listen to his some of these particular ideas and go this needs an orchestra or?

P3: Yeah, I think when P4 recorded a lead guitar over one part and we were listening to it again. And P4 was like, yo, what if we added a marimba and then we added that? And then I was like, yo, what if we added like a glockenspiel? And then like, yeah, I don't know, it was just kind of like expanding the sound.

P4: Yeah. And then P3 came up with another melodic idea and we just add a piano on top of it because. Umm...

P3: But it's just like you just like know when you listen to it, you're just like, I don't know, you get that idea in your head and just like that would be sick right here and you just do it.

P4: And this was done on top of yeah, AI generated riffs in sections I think.

P3: You could say the AI inspired it, I guess, but it's like... it's like even if it wasn't AI, I would might be inspired to do this type of thing on a certain thing. But like the.. the ideas generated to the AI stroked my brain in the right way that made me want to do that.

R: Yep. OK. And so- so I'm now looking over here, it says we experiments with different effects to bridge sections together.

P4: Yes.

R: Talk to me more about this particular thing.

P4: Well, that's the particular little. 2 seconds reaching chord thing- that was a big bland in the beginning, so we spent a bit of time trying to use some tremolo effects. Make it sound a little bit crazier. So that's, I don't know. I I I can't say that I was trying to go for something more digital machinic, if you will. And that might actually come from the fact that we are doing this as [ANONYMISED], and the whole AI slash machines taking over the world type of vibe.

P4: But it was mostly it's just the cord with some crazy effect going on. Some travel effect going- it's not even that crazy, but.

R: OK, cool. Umm. And were still playing with structured beginning with session. I'm looking at this post-it note right here.

P3: Yeah, we just move stuff around at a new parts just so that it, like, feels like a song instead of just, like, reached, riff, riff, riff.

R: Yep. OK, cool. I need to upgrade my computer. That's good.

P4: Yeah, we struggle with that a little bit as well. That kind of set us off. Yeah, few minutes.

R: Right?

P3: But I was just having computer problems and it was like slowing down and wasn't able to record stuff and I had to restart the DAW a couple times is really annoying

R: OK. But that's all normal. OK, cool. Anything surprising or super important?

P4: No, I didn't. Yep. Besides technical difficulties.

P3: Yeah, this is at this point it's a pretty standard, just like writing a song kind of session.

R: OK, cool. OK, so one magical word to summarize all the.

P3: Refinement.

Interview: Session 4 & Post-Task

R: So you want to talk for your composition process and what you did to wrap up?

P4: In this session or overall?

R: Just this session, yeah.

P4: Yeah, it was a bit rough because we, we we had it pretty much done by by the end of the third session. So

P3: there were a couple things we changed that we changed the intro to the song and stuff

P4: recorded bass.

P3: Umm, there's just like finishing up everything

P4: mixings. Adjusting some stuff

P3: There wasn't much mixing honestly

P4: a little bit

P3: tiny bit.

R: Was it a bit stressful cause I said finish it in an hour or?

P3: No, not at all. We finished before. We're we're like, trying to look for things to do, and we're just like, fuck it. Um it's basically done just kind of wrapped up a couple stuff.

R: Yeah. Cool. So I guess in terms of reflections, not really much going on.

To Post-Task:

P4: Not at this stage, I guess pretty much everything happened. Well, one big reflection I would say is that, uh, we were both quite surprised that we could do something. So we efficiently and we were kind of praising this way of working, ,as in having like work for an hour, stop reflect on it, work for another hour, stop reflect on it. Um, that was quite cool actually.

P3: Umm. Yeah. Like we were saying, this would be. This is a nice way to format the songwriting sessions in general. If we're doing something in the future, just like do a little bit

stop, take a break. I mean, I guess this is like a normal way of working, but like I don't usually work on songs like that, especially with the reflective slides. It's kind of cool.

R: Yes, the big questions at the end was gonna be, you know, how do you feel that across everything then this like during the screenshots, did you feel like it was helpful? And if it was, then why? Or if it wasn't helpful, why not, you know.

P4: Yeah, it's all pretty much as, I don't know, committing your code to a GitHub. So you like you have these bullet points of like summarizing what we did in the past hour very clearly and we kind of looking back towards all the all the boards that we have here. It's quite nice to see like the evolution. So I think it helps,

P3: I mean it's actually pretty cool,

P4: a bit of time of course, but. Then at the end of the session, it's helpful to know exactly what we did and how did we process it, processed it?

P3: I kinda like the idea of documenting writing sessions for music in general as well, because I never really do that and it's kind of I like looking back on stuff that I did and it's kind of cool to see a process of like it moving forward.

R: Yeah. Cool. So like, could it be improved?

P4: The process.

R: Yeah.

P3: I mean, I'm sure that I mean that our process is basically my normal songwriting process just where we and we instead just generated a bunch of Song ideas up at the start rather than me like working on stuff myself.

R: So I mean more like this process of chucking screenshots in and doing sticky notes is there.

P3: Ohh that.

R: Be slicker or something like this.

P3: I Need easier way- it would be nice if I had a Mac like I don't know the best way on windows to just like the screenshots. I guess like the we figured out that I can like screenshot and then copy it into there and work pretty quickly. Yeah, just, I don't know. I don't. I don't know if it can be improved. It's kind of we kind of figured it out by the end. Now that I think about it. Umm.

[ASIDE COMMENTS]

R: Was there anything that you did differently because of during the screenshots and the?

P3: Not Really, I think we're just if we were doing something, we just be like, OK, two screenshot for that.

P4: Yeah, maybe. I don't know. Not differently, but it definitely we definitely put more emphasis maybe on every step. So like the fact that we took a consciously took a screenshot of it, made it feel like more like a box that you had to tick. So this is like a further step towards the end of the song.

P3: I think something that was nice also about the sessions aspect of it. And there's just like, I think at the beginning of each session, we'd like listen to through what we had and then be like, OK, what are we doing for this session, which was kind of cool to make, like short term goals? I feel like that made us a bit more efficient because they I don't know when I write songs like in the past, I'll just kind of like open up the DAW and be like just pick something and start working on it. And I would get overwhelmed very easily and stuff like that. So it's kind of cool to just, like, open up a session, be like, alright this session, just doing this thing.

R: Cool cool cool Umm, [...] OK. Any other comments about anything?

P4: And that was where it was. This was great. Think. Yeah. Like like we said, it was quite nice to feel that we could pull a decently finished Song in four hours. Also, we were very happy that the model worked better than expected. Everything went just like for the amount of preparation we did for this in advance, which was zero. Everything went very, very good, like

P3: There wasn't really any downtime. We always like had something to do and yeah, always like ideas of what to do next.

Miro: Session 1

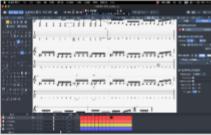
Reflection 1:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
     	<p>The new AI generated ideas led us to different song paths that we would not have considered otherwise</p>	<p>Listened to different variations, curated them and selected the parts we liked the most</p>	<p>Started by writing a riff on the guitar</p> <p>Converted the riff to symbolic format using Guitar Pro 7</p> <p>Generated variations/continuations of the riff using our AI generative model</p> <p>Recorded ideas into the DAW and began producing the song</p> <p>This session did not use much iterative refinement on AI ideas. It was more about setting up the song and recording ideas into it. We think that the next session will be more about reflecting on the AI generated ideas</p>

miro

Miro: Session 2

Reflection 2:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
    	<p>The riff had a particular drum beat that led us to using a drum loop sample, something we would not have thought to do otherwise</p> <p>One riff was too simple for our taste, so we took it and shifted it in time a bit to make it more interesting</p> <p>Using drum loops is not something I would typically do, but the generated riffs inspired us to do this and it turned out cool!</p>	<p>Took a generated riff from earlier, used it to generate more riffs</p> <p>Did it again with another generated riff</p>	<p>The generated riffs helped us understand some flaws in our guitar playing techniques</p> <p>Expanded no the ideas recorded in the first session, adding new layers and sections</p> <p>started adding more effects and production elements to increase the production value of the song</p>
		<p>Began to move away from our previous way of dividing work (Jack recording, Pedro generated riffs) and both of us started working on the song production</p>	<p>Jack - I tend to hog the computer ad record most parts myself, I learned to give Pedro more chances to record</p>

Miro: Session 3

Reflection 3:

Reflection on Current Process
"Did you re-examine what you'd learnt and find alternative ways of doing things?"



Reflection through Experimentation
"Did you iteratively generate and test ideas, or make comparisons in the system?"

Began adding
orchestral
layers inspired
by bands such
as the Ocean

Many different
structures were
tested and
abandoned before
settling on a song
structure that
worked for us

One "verse"
section felt bland
until we added lead
guitar and piano
layers on top of it

We experimented
with different effects
to bridge sections
together where we
felt that the
transition was
lacking something

Spent a
considerable
amount of time
exploring melodic
ideas on top of the
AI generated riffs

Reflection on Self
"Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"

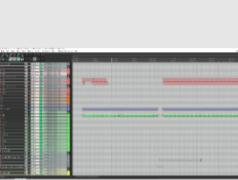
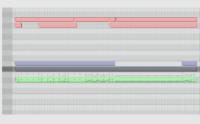
I need to
upgrade
my
computer

Other
Any other reflections on your process?

Computer started
slowing down, had
to restart my DAW
several times in
order to continue
recording

Miro: Session 4

Reflection 4:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
     	<p>Recorded real bass guitar instead of using bass samples to give the song a more human feel</p> <p>Moved things around to finalize the song structure</p> <p>Rewrote the intro to make it flow more nicely</p> <p>new intro part took a couple of iterations to settle on a final version</p>	<p>I can record bass guitar extremely fast when I know the parts already</p> <p>final mix touches to make the song sound a bit better</p>	<p>Recorded bass guitar</p> <p>Exported final mix</p> <p>enjoy listening to the final song!!!!!!</p>

First-Person Account (Unedited First-Draft)

Due to its characteristics, the interaction with our AI tool was mostly dictated by an initial need for isolated riffs, or musical ideas, that could potentially be put together to form a full song. This workflow was based on findings from some of P4's paper, in which it was demonstrated that the model is good at generating new ideas or variations when prompted with an initial seed [2,3].

The whole process started with P3 experimenting ideas until writing a riff on the guitar. We started with a human-written riff like this in order to give a bit of our own musical personalities to the generated riffs. That riff was converted into a tablature by P4, using the Guitar Pro software.

Once we had that initial riff in a format that the AI model could process, we ran our script that takes the riff as an input and proceeded to generate continuations of that idea. The model outputs not only guitar sections – it is a multi-instrument generative model, and we forced it to generate bass and drums alongside the guitar. After a first round of generations, we listened to the output and curated/filtered the parts/ideas that we liked the most and which inspired ideas.

At this stage, we divided our workflow into two parts: P4 took care of filtering those ideas and feeding them back into the model in order to get variations, and P3 started a session in a DAW, by recording on the guitar the same initial riff that we started with, adding drums and bass to the mix, sonifying them by using VSTs
(GetGoodDrums\footnote{<https://www.getgooddrums.com/products/p4>} for drums and Submission Audio\footnote{<https://www.submissionaudio.com/products/umanskybass>} for bass).

After the second round of generations done by P4, we both listened to the new pieces and selected even more ideas. From these ideas, we began to imagine a rough outline of the song structure based on the generated riffs. Having curated a few riffs that we felt were capable of being put together coherently, we started focusing on the DAW workflow exclusively. This step was particularly important, because it was at this point that we envisioned an overall structure for the song based on the AI ideas. This overall skeleton was greatly influenced by the generations of the model.

Once we recorded most of the ideas and had them in the DAW, alongside bass and drums, we realized that it would be necessary for us to bridge most of the sections in a way that would flow better. Furthermore, in order to enrich the song, we also thought it would be good to include extra layers of sound, from samples or new ideas composed on the guitar.

One particular section produced by the AI had a distinctive drum beat generated alongside the guitar riff. This prompted us to explore some sound samples that would not usually be included in the type of music we produce with [the band]. For some other sections we took the liberty of slightly changing the output of the AI model in order to make the content more interesting (e.g. shifting a whole phrase by a 16th note).

A given section that we worked on made us reflect on the aesthetics of an artist that we like [5], which prompted us to include a marimba and glockenspiel over a lead guitar part we

had composed. Likewise, a few AI-generated sections led us to create novel lead guitar parts over the more rhythmic riffs. Once again inspired by the workflow of a band we listen to [6], we decided to try and add a piano mimicking the melodic line of the guitar as it seemed like it might fit well with one of the AI generated riffs. From an instrumentalist point of view, some ideas generated by the AI model made P4 reflect on alternative fingerings that would make it easier for him to play some of the parts created by the machine.

A final step of the recording process consisted of switching from the VST bass we were using to a recorded bass, making the whole song more organic and human sounding. It was very easy for P3 to record the bass at this stage by mimicking most of the content he had previously recorded on the guitar. Overall, interaction with the AI model was seamless, and we realized that the whole process was very efficient: it was very easy to come up with starting points, or to unblock eventual writer's block. Another important aspect of this process is that we think that the integration of the AI tool in our standard compositional process was very natural, and it didn't feel like we had to change our usual way of doing things in order to account for the contributions from the AI model.

P5

Interview: Session 1

R: Please talk me through your composition process and what you did in the session.

P5: Yes. So and my composition process was a lot of changing things, a lot of trying out and seeing what happened. So I kind of started from pretty much scratch. I found a snare pattern that I already had was like snare and claps - from a drum pattern. Umm and I started working with that initially um just to try out, uh, some basic ideas and then kind of started looking into a specific function in tidal cycles that I have been kind of previously enjoying working with. So something called like binary patterns and I use that to try and create some more complex rhythmic structure, within the composition itself Um and I found that it was quite useful for that. I found that it was and very. Kind of interesting results quite quickly. So then I used that structure um that I've been using for the kick and I tried to make a a bass pattern. I spent quite a long time because I couldn't really sonically find a sound for the bass that I liked, so that kind of took up quite a bit of the composition time. And then halfway through trying to find a sound for the bass, I typed something that I wasn't expecting to type. I was trying to find a different sample and I ended up instead.

R: Is that this? Uh squizz thing?

P5: No, that's that's a function. Just to apply things... I I was trying to find like an 808 bass sound. So I typed in 808 and then the first sample was actually a cowbell.

R: OK.

P5: So it was like quite unexpected. I wasn't like expecting to hear it and then. Actually, it's sounded kind of cool. I was like, oh, this is interesting. And it was actually more interesting than what I was doing before. So then I kind of copied that across and tried to use that. Umm, I was like a weird melodic opening line for the so- kind of that's where I guess the start of the track started feeling a bit more. OK, well I know where I'm going with this.

R: OK.

P5: Umm, so that was kind of interesting. And then yeah, so I was playing around with that, added some more functions to that that made it like sound a bit more, umm, complicated and interesting.

R: Yeah.

P5: And then I, uh, went back to the drums, tried to program a bit more of the drums to make it, umm, slightly more. So I was trying to find some samples that I liked within my samples folder, so I was looking for a break sample. And then after I found one that I liked I included that in the drums... started thinking a bit more about like the overarching composition. So could I apply like some effects that would like change all of the and the sounds not just like one of them?

R: Yeah.

P5: And. Also, like how did I want it to structure? How did I want it to? Kind of like which. Which bits did I want to start with? Which bits did I want to like come in?

R: Yep, so it was mostly. Playing around to come up with, you know and then to latch onto things you'd like to, yeah.

P5: Yeah, I didn't have an idea from the start of like ohh I definitely wanna go in this direction. It was a lot of like, OK, I'm going to try this out. Does it sound good? And then like trying things out together, just sound good with that. Does this sound good with that? So it was a lot of like matching things and seeing what works, but then also a bit of like experimentation and and obviously this this surprise moment was kind of quite crucial for building it, so.

R: Yes. Yeah. OK, so my next question is to talk through the. Reflections, or specifically, yeah, talk me to reflections you've written in Miro. So, should we start with this surprising?

P5: Yeah.

R: I guess. The idea was hey this cowbells super groovy?

P5: Orr just like sonically quite texturally different from what I was expecting. Umm. And then I kind of that made me think ohh, OK, I actually like this sound and maybe want to change some things so that it fits around this sound rather than like just trying out loads a different things.

R: And it came from a a mistake, right?

P5: Yes. Or yes. Or, yeah, just trying to find the right sample and then finding a different sample that I didn't know that- I didn't know that I actually needed.

R: Yeah. Cool. OK. Uh. OK. Maybe talk to me a bit more about this. Um, Binary function right? So how does this? How does this work?

P5: Yeah. So basically it takes. You can take like a number whatever number you want and then encode it into like. Computer obviously has a binary representation of that number. That binary representation of number is like a pattern of zeros and ones, so it'll be like 010 or whatever and then you can use that like information about zeros and ones to trigger like a sample. So where 0 is not triggering it and then one is triggering it. So you kind of turn-turn this number into a pattern of ones and zeros that then triggers the sound.

P5: And that's something that I I kind of liked to play with because it feels like it gives you quite, quite a lot of control.

R: And so when you, yeah, when you play with it, is it just plugging numbers in and seeing what it does? Or is it deeper?

P5: Yeah. So there's a lot of like trying different numbers and trying which numbers give you patterns that sound interesting and things that sound like. Complex enough that you that it feels like it's kind of doing something, but they're not super like, not overly complicated so that there's no discernible like way to understand the musical pattern if you know what I mean.

R: OK. And so in this post-it note you then say testing in conjunction with the kick drum pattern.

P5: Yeah.

R: So talk a bit more about. That for me.

P5: Yes, I was just trying like trying different numbers and then trying to like alternate the numbers so that like maybe sometimes the drums were going well, the kick was going and then sometimes the bass was going in a way that like used space compositionally as well. So like you were that they weren't like going together all the time and then you can really kind of make the difference like what I wanted was to try and have, like. Some, yeah, some some kind of separation between the kick and the drums. So I was doing that by like giving them different numbers and seeing where they would kind of interlock with each other and something.

R: OK, cool. OK. I will ask about, Yep. So you did these things. Found these, samples, and so you've written zooming out at the end, right?

P5: Yes.

R: That's the things about the structure right.

P5: Yeah.

R: OK, cool. Yeah, I think we've talked about that at all. Happy. Umm. OK. Umm, so one of the questions, is there anything that stood out is important or surprising. But I think we talked about that too.

P5: Yeah, I think that's.

R: So if you had to summarize everything you just did in one word.

P5: Hmm hmm.

R: Well, what would you choose?

P5: Only one word.

R: Yeah, one word. It's not super important by the way. It's kind of a fun question.

P5: Yeah. Let me have a think. Maybe. Unanticipated.

[Interview: Session 2](#)

R: OK, you seem to be smiling. Was it good?

P5: Uh, I I have fun, but it wasn't as as a good as last time. I don't think actually.

R: That's OK. Um so please talk me through your process and what you did.

P5: Sure. So I started off. I kind of I was working in the same file but then kind of starting down the bottom I made like a new comment saying that I was saying the hour two uh, I spent a lot of maybe like the first 5-10 minutes I was working with the agent. Umm so I was getting it to produce a pattern through pressing the dollar sign on my keyboard. It would like automatically suggest a new pattern. I could then evaluate those and I spent a long like I was just kind of generating, evaluating, and then deciding whether I liked it or not. And then if I liked it, I'd keep it. And if I did it, I would just get rid of it. So I spend a lot of time just doing this, like generate, evaluate, discard or keep.

R: Yeah.

P5: Um kind of loop? And then I well, I got one pattern of kind of a it's kind of a melodic pattern and it felt like it had a bit of shape to it, a bit of intrigue. So I kept it as like the starting point for the composition, but it still felt like it wasn't. Super exciting. So I wanted to try and find a way to like manually, or like through my own coding, to update it. So I tried out like lots of different functions. I added like a reverb, an, echo and also I changed the rhythmic structure.

R: OK.

P5: Uhm, so that it sounded a bit more interesting.

R: And that was to try and keep the pattern the AI had come up with.

P5: Yeah So I kept the pattern that the AI and then just like, alter it myself and to make it sound a bit more how I wanted it to.

R: But you were mostly altering the timbre or.

P5: Umm, some of the Timbres. Some of the Timbre but also some of the rhythmic structure, but keeping the notes the same.

R: OK.

P5: So I did that and then. Uh, so that was kind of this part then I spent a bit more time trying to generate some more patterns, so once I had that one that I generated and then kind of shaped, I went back to try and generate some more, something that would work together quite nicely with um, the pattern that I already had. So it's been- I spent a bit of

time and I didn't really have an idea of like what I wanted, so I was really using it to like generate some ideas of what to go next. It wasn't like I had a kind of concept in my head of like I wanna. I want it to generate this. It was very exploratory- um, yeah ended up producing like another. Another melodic pattern that then kind of when I put them together they kind of interweaved quite nicely. So I was like, OK, I'll keep that one too. And then again, the same thing with the second pattern was like, umm, working out how to shape that manually with the code so that it sounds a bit more nice.

R: Yep.

P5: Uhm, what should I do next? And then I kind of like stopped generating. So I kind of moved away from that. And then I went to try and like while I was I was. I wanna program some drums now myself, so I want a bit more control.

R: Yep.

P5: Maybe. And so I went back..

R: Yeah, it seems reading around this sort of stuff. Umm, things like sat for a minute thought something was not right, or um, moved away. Is this kind of like a bored of the AI or frustrated or I don't know?

P5: Not bored or frustrated, but just wanting to kind of shift like it. I I felt like the AI was good for this kind of initial generation of like a concept that I wanted to work with, but then I wanted to... do stuff myself and like I it wasn't like I was frustrated with it and it wasn't doing anything that I wanted it to, but I just thought like, ohh, now that I have this idea of something in my head kind of popped out of where I wanted to go with it. So then I kind of started doing programming stuff myself.

R: Yep.

P5: Umm. And then yeah, the part of that process was actually going back over some of the things that I did last time and then listening to them and evaluating them and thinking well, which bits did I like, which bits did worked kind of well.

R: And that's what you mean when you say, like uh.

P5: So that's what I mean here. Like went back over everything made last session.

R: OK. Yes.

P5: Um and then kind of spent some time experimenting with the sound. So kind of taking the patterns that I'd made last time, but then changing some of the sounds to see if there would be something else interesting that would pop up.

P5: And then, yeah, this this kind of once I got that, I don't know if you can see on the on the

screenshot, I wrote a little note to myself saying there's something missing and I'm not sure yet. And that was the point where I was like, OK, I'll need to sit for a second.

R: Yep. Right.

P5: And try and work out what I wanna do next.

R: OK.

P5: Uh, so I was there for like two or three minutes, just like sitting.

R: And that's.... I guess that's why that person is in this process box, right? Because it was more of a...

P5: Yeah, exactly. It was more like a exactly like a systematic. Well, what do I actually want to do next?

R: Yep. And then any, any, any deleted it, did it-

P5: Yes. Then I went back and then I was started generating with the agent again and then it. It made like a bass pattern and I felt like ohh, maybe I'm missing like a bass and it- I was. I was spending some time doing the same process of like oh, it generated something and then I was shaping it, but just it didn't really work. It was just like, oh, I'm not. This doesn't feel right.

R: Hmm hmmm

P5: And so I spent a lot of time like editing it and trying things out, experimenting, and then reflecting on the the outcomes of that. And then overall, I was like, this is still not working, so I deleted it completely.

R: OK. Yeah.

P5: And then I went back to the melodic patterns that I generated at first.

R: Yes. Yeah.

P5: Uh, and I found that something wasn't was missing and this was kind of interesting that I was like I I realized that it was like the scale that it was in. I didn't really like the scale that it produced- so that a new in tidal you can like list out all possible scales that you could use.

P5: So it kind of it starts off with like a the 12 tone scale like note values can be 0,1,2,3,4 which kind of corresponds to a piano, but then you can kind of like map those to degrees of different scales, if that makes sense.

R: Yep, OK.

P5: If that makes sense.

R: OK. Yeah, yeah, yeah.

P5: So then I so then I like listed out like all possible scales that I could use and like went through each of them was just like does this one sound good? Does this one sound good? Until I found one that actually felt like made it sound a bit more power wanted it to sound.

R: OK. Yep.

P5: Umm. And then went back to try out the cowbell sample from last time and it didn't work. So I went back and removed it again and then that was it really.

R: Okay

P5: Does that all make sense?

R: Yeah, that's good. Yeah. No, I think we discussed all the stuff.

P5: Yeah.

R: Yeah, I think it works.

P5: Cool, cool.

R: So I suppose, uh, I'd ask this post-it note here. Where you say... I found a scale that did resonate.

P5: Uh huh.

R: You said it's resonated with you and you've put it in the reflection on self column.

P5: Yes.

R: Was that..

P5: Does that make sense to be there?

R: Yep

P5: I feel like it does. It's it's not a reflection on like what I was doing or how to change things, but actually, like, what I wanted the piece to sound like and what I I guess like yeah, when creating music it's it's like you're trying to express some kind of uh internal.

R: Yep.

P5: Aesthetic and and that's.

R: And so do you feel? Yeah. Do you feel you are going back to because the AI's come in there right? And sp before you had fun things like what is cowbell seems cool and you were-so with the AI did you feel like you were coming back to your usual aesthetic? Maybe?

P5: Umm, I think so. I think definitely. I think the things that it was producing weren't necessarily in my aesthetic, so then it was a case of like refining what it was that I actually wanted, wanted it to do. So it was kind of giving me very like, um, overarching things that might be useful. But then, when it came to what I actually wanted then that was still coming from me. You know what I mean?

R: Hmm Hmm OK. Umm, anything that surprising?

P5: Not this time. It was less surprising this time it was a bit more of a struggle. This time I felt umm.

R: Yep. Umm, OK. And if you have to summarize it in one word, uh, I interrupted you as well.

P5: Uh, no, it's OK. One word summary I think would be turbulent.

R: Turbulent, cool. These are a good words. OK, cool. Were you gonna say something before before I interrupted.

P5: Uh, I don't think so. I can't remember if it was anything. I don't think it's important.

R: OK, so I'll stop recording, uh.

[Interview: Session 3](#)

R: What you did and you were reflections.

P5: Yeah. OK, uh am so I was kind of doing a lot of the same as I was last time, but this time I wanted to try starting out with like a human generated pattern. So last time I started with like the AI generated pattern and then composed around it and then I was like this time I wanna start with me working on something and then after that I would trying to write and generate patterns that I could then shape around my own composition. So kind of like the inverse of last time.

R: Yep.

P5: So I spent a little bit of time at the beginning trying to like build up a drum pattern. Umm and work around it so, you know, started off by trying different combinations for the how I wanted to kick drum for sound and then working on building like a lot more layers into that.

R: Yeah. Uh.

P5: All of that sounded quite nice when it was coming together, and I then went back to the agent. So once I had this like human generated structure went back to the agent to bring in

some ideas from from the agent itself and so I could see that here, umm, and then actually like the first thing it produced was it felt really nice. When I I then kind of switched zones again. I went from thinking about like patterns, like, just generating patterns to this like wider composition- so I put this thing zoomed out again and so start thinking about the compositional structure. So I was I built this like mixer in tidal cycles so I could bring in certain parts and then try them out with. So I was like trying out like all the different parts together.

R: Yep.

P5: And like reflecting on on what felt right to do.

R: So that's like a mixer in code right, it's not like faders and things, it's still in the.

P5: No, it's it's, it's just like a I don't know if you can see this, but like here. So it's just like a A 1 or 0 value that like. Then you can apply which like turns the pattern on or off basically.

R: I see, yeh

P5: And so it was like, uh, I could then try like ohh I could try this bit with this bit or try this bit with that bit. So like all the kind of different permutations, I guess. Ohm and that was sounding kind of nice. And then I was like, oh, I feel like it needs a melody. So I went back to the agent to try and generate some ideas. Umm. And then. Got a got it to produce a a melody, but I kind of again didn't read like Timbral quality of bit. So I I tried out lots of different sounds trying to find like there was one that felt right.

R: So does the AI generate Timbre sounds. Or does it just generate pitch pitches?

P5: It just generates uh like pattern around. So like the actual sound and stuff, they're all sample based, so it's all and it it kind of it. It knows the names of the samples to use, but it it doesn't have like it can't create sounds. If you know what I mean.

R: OK, right. So it's still it's suggesting samples to use, right?

P5: Yeah, it's suggesting a sample to use, yeah. From existing ones that I have in in.

R: Yeah. So here what you're reflecting on. You know, I felt needed a different Timbral quality is that. Because of the quality of the sample its chosen or?

P5: Yeah, the sample that's chosen which is, which is my own sample. So then I kind of went through all my my other samples that I had on this computer and I was like trying to find something that sounded better with the pattern that produced. But then I I couldn't find that. So I ended up going back to the same one and then I was also trying out what I did last time with trying out different scales, to see if that would work. But again, I couldn't really find one that felt right. Umm. And I think that's where I left it. And then I just recorded something from from everything that I've done.

R: OK. You learnt, you learnt nothing about yourself, this time?

P5: I didn't. No, I don't think. But. I can't think I thought of anything about myself this time.

R: Nope. OK, sounds good. So it's sort of. Ah man, I had a question in my head, but just its just disappearing, give me one moment to just reconvene my notes.

P5: Sure, of course.

R: Now I think it's, I think the same kind of themes come up right.

P5: Umm.

R: The idea of generating ideas and then listening them to them to match something that you like. Umm. So when you started this one out and you decided you wanted to start again with like a human, yourself, pattern. Was their particular reason why you did that? Was?

P5: Hmm. I just I think I just wanted to try something different and I think last time I've done it the other way around. So I was like this time I wanna. I wanna see if this is better. See if this works.

R: Was it better?

P5: No. It wasn't. I didn't think it was necessarily worse. I think it actually the problem. The problem that I was having was that I didn't like the Timbre, which actually isn't the agents felt that's a that's my samples fault. So actually I did that like I think it in some sense it's actually maybe it was better this way around.

R: Yeah, because?

P5: Because I felt like I was more in control.

R: Yes, and so also. So you said last time something along the lines of? Umm, the idea would generate so patterns and I sort of have a general shape that you liked, but you'd then go into like the detail.

P5: Yes.

R: I guess this time starting out without AI. Did you think about the same kinds of things or not or?

P5: Umm, I think my cognitive process is somewhat different because it's like because I know where I'm trying to go. Anyways, when I'm starting off, it's like I can then just like follow that thread and follow where I'm going in my own head. Whereas like when I'm working with the AI it's a case of like I mean I have a bit of an idea of like what it's gonna sound like before I evaluate the pattern, but I don't know exactly.

R: Yep.

P5: And then so I just try it out and then from that because I haven't thought of it myself. It takes me a little bit more time to spend the time like deconstructing. OK, well, this is where this is where it currently is and where if I want it to sound like so with the first thing that I generated it was, it sounded pretty actually sounded straight away. Quite interesting to me, whereas the second one took a bit of reworking a little bit to make it sound a bit more interesting- if you know what I mean.

R: Yeah. And so how do you feel about this idea of, like, OK, the AIs, you're know exactly. Sure. What it's gonna do, you can kind of have guesses, but it's not precise. How does that?

P5: Yeah, it's a. It's a kind of double edged sword. I think it's in some senses it's good because it gives me the kind of creative ideation of things that I wouldn't... I think when I do it myself, I kind of tend to fall into regular, you know, ways of doing things and then actually this kind of pushes me in different directions or gets me thinking about, like doing things in a different way that I haven't thought about myself. So it kind of in some sense it's really useful, but at the same time, because it's giving me things that you don't have control over in the finer sense, you don't have like that micro control over it. Then if it produces like either it's a case of having to like scroll through lots of different patterns and like, get rid of them trying something else, or it's a case of like reworking it quite a lot. Um so it can be a bit more fiddly basically.

R: And so I wonder. So in the first session you're using this binary pattern, right?

P5: Yes. Yeah.

R: One of the things you said you like about it is you can control it and try different numbers, but it's not like a discernible way to understand exactly what the pattern is going to do, right?

P5: Yeah, yeah. There's a level of abstraction, definitely, that you don't like. You can't see like the ones and zeros, that it's gonna produce. You can hear it, but you can't see it, so you have like some macro controller I guess of that.

R: And is that similar to the AI? Or is it a different kind of.

P5: I think there's like a extra level of abstraction with it somehow. I think like the abstraction with the binary pattern is like. You can change things and see what happens, but it's you know what the I think I I. Maybe it's like a complexity thing as well, because like the binary pattern only really produces this like. This one thing, whereas like with the things produced with the AI agent, it's like it will be like a pattern with a function applied to it with another function. So it's got these like extra layers that you have to kind of disentangle.

R: Yep. Umm yeah.

P5: I mean.

R: OK.

P5: So yeah, maybe that could go and like reflections on the self now. Well, maybe. I like to be in control.

R: Right. I don't know?

P5: I gotta, can I put that? Can I put that like ad hoc hmm.

R: Yeah, of course. Yeah, yeah. OK, so any surprises?

P5: Umm, not like the first one, I think. Umm everything was. Not completely unsurprising, but not super surprising either.

R: And you're one word summary.

P5: Ohh, OK uh chaotic.

[Interview: Session 4 & Post-Task](#)

R: So, tell me about it.

P5: Yeah, sure. Umm so.

R: I like how you went colours across as well. That's nice.

P5: Yeah, I thought it would be nice to just like color code it by session I guess. Umm yeah, I started it off and I was thinking about the ways that I've worked before. Which ones were working well and which ones maybe didn't work so well? Umm. So it kind of started with that reflection before going forward. And I decided to stick with the way that I did it in the last session, so composing without the machine 1st and then bringing the machine in for ideas later on. And then I was still kind of thinking about this, how personally I like to like the levels of control that I probably need within the composition process. So then I yeah, I tried to, yeah. Experimented quite a lot with pat- music patterns to build up. The first part, which is just me. And a lot of that was, you know, trying out different values in functions and changing samples. So kind of very similar to before. I then after a while after I got to a point where I was like, oh, OK, this is interesting. I kind of came back and I circle back and I thought about doing a different... working with the agent to produce some more things, so I started off by just saying doing the same way before that I was doing producing some patterns and testing all out.

P5: I then decided to do different way of working with it so that like- it would, it would then kind of like hybridize everything that was generating so rather than like generating one thing and then deciding whether I liked it or not. And then getting rid of it. I was like, OK, well, I'll

take, I'll generate loads of things and then from each of these things that the machine agent has generated, I'm going to take different functions and, like, smush them all together into one pattern. So it's kind of like a Frankenstein approach.

R: Yep.

P5: So that was something I had done before. So that was like here.

R: Yeah okay. Yep.

P5: Umm. And then went back to kind of experimenting with changing different numbers. Umm, when I was experimenting with different numbers. I then kept trying to put in like numbers that were like absurdly high. So think things that would like almost break it just cause like that felt quite fun and that also kind of got me thinking about how that kind of produced sonically things that I thought were interesting, this kind of like glitch sounds.

R: Yep.

P5: So I was doing that for a bit and that was really fun. And then I kind of came back, uh, where so I made lots of things. They all sounded kind of interesting and they all kind of work together and then it kind of got kind of got to kind of a bit of a wall, got a bit stuck. And then I was going back and just trying to kind of think about what comes next. I then kind of went back to earlier composition sessions that I've been doing, and then picked out like one or two things that I thought might sound good and, and then turn that into. Kind of an overall track. Did a quick recording, but actually I had a bit of time. So what I did was I recorded it and then I listened back to the the whole track, which this is something I hadn't done before, was actually like recording it. Do like a test recording. Listen to it.

R: Yeah. Was that pressure of the study, no?

P5: I think it was more just like I've refined the process a little bit, so I had a bit more free time at the end. So then I had time to record it. Listen to things. Make some changes. Based on actually listening to the audio that I produced from start to finish, so then I kind of changed some samples and also a couple of values to help kind of shape the sounds and then recorded it again.

R: Yep. OK. Cool. There's a couple of things I'm gonna just sort of probe. Uh.

P5: OK.

R: So here where you said umm, you tried new agent and you generate lots of functions and put them together.

P5: Yes.

R: Umm, there seems to be similar to this mixing idea earlier, right where you would click things on enough.

P5: Yeah, I guess so. I mean, it was maybe just a kind of new way to like take because obviously it's like generating. Ideas and these ideas are kind of like fully formed, but then maybe it's a a way of like. Taking out the bits from each that are interesting and putting them together and then getting rid of the rest of it. Whereas like with the mixing, it was still keeping things but it was just deciding like when in the sequence it would come in. If you know, I mean.

R: Yes. Yeah, that makes sense. So is that about control?

P5: Umm, probably less about control, but more about refining.

R: Yep.

P5: Umm. Yeah.

R: Ok. Any other thing if here if I go to the uh, the glitches and the crazy extreme numbers.

P5: Yep.

R: And so is this glitches something you like or you know?

P5: Yeah, it's something I like. Its also something I like doing as part of the process. I like like pushing things to extreme a little bit and seeing if I can get it to sound like it's breaking. Like I don't know why, but I think that's something I'm kind of interested in as a wider method or a wider way of like making music, like pushing it to its limits and pushing the machine.

R: And is it something? I mean, it's probably isn't super helpful for the study or whatever, but I'm just curious, is this part of live coding thing to sort of do super glitchy crazy?

P5: I think so. I think I mean obviously like the sound like a lot of people do kind of quite glitchy sounds anyways. And also I think it is tied into the medium like because it is quite easy to like.

R: Yep.

P5: I was like to do this at like an end of a set is like set the BPM to like 1 million or something and like see what other kind of interesting, but I guess it's it's like another thing of within that then you get this thing of I mean everything I use this word pattern so much because like everything in my head is like around these patterns but then you get this like thing of like oh the limits of like when do you stop perceiving the pattern as like individual notes and you start with it especially when you like speed things up you start to it starts to like amalgamate and things like that.

R: Yeah, that. Around 300 I'd guess.

P5: Yeah, I think there are actual studies on like what I know. I know the lower limit is like 33 BPM, but I don't know what the upper limit is

R: OK, I don't. If it goes so fast it turns like a wave right cause.

P5: Exactly. That's what I mean. Like it gets like they become notes kind of become individual samples.

R: Yeah.

P5: Its pretty fun.

R: OK. Yes. Anyway, sidetrack thing.

P5: Yes.

R: But OK cool so.

To post questions:

R: OK, so now thinking about like the whole thing of me making you stop and do this thing with the screenshots and the post-it notes. And go through that whole process. Do you think it helped improve your creative practice?

P5: Yeah, definitely. I actually was thinking that a lot when I was doing it that I found umm. Actually like the, there's not many times when I'm creating that I go back over and like. Am do it with a fine tooth comb that I actually, you know, really think about the decisions that I'm making and and why I made them.

R: Yeah.

P5: So I think having that chance to kind of like scrub through and look at the kind of points and actually like I was kind of conscious that I was marking these points as well. So I wrote like little comments to myself and yeah, I found that being able to really dissect the creative process was actually, yeah, it was useful and I would say it did help improve the great practice.

R: OK, I'm in any particular way or just kind of?

P5: Um I think in helping building an understanding of the cognitive processes that go through the OR like I think as well, I just didn't think about how many choices I actually did make. And even like you know, an hour. Obviously it's a long time, but it's actually not that long time so well, uh.

R: Yeah.

P5: And there was a lot going on and there was always like a lot driving you forward and it was quite interesting to see how these like- especially the points where I would stop. And I would think and like then I would do something completely different. I thought those were kind of really interesting to think about.

R: So any suggestions on how the like the process could be improved?

P5: I'm not sure. I think. Maybe I was a bit too. Maybe I would like to spend more time on it. I mean, I obviously like already spent quite a lot of time doing stuff today and I think I was kind of scrubbing through and I was going through points that I had in my own head of. I know that something interesting happened at like 10 minutes in or something, but actually it might be worthwhile like looking through everything with a finer microscope and and actually maybe I missed.

R: Yeah.

P5: Maybe there were kind of cognitive processes that were really interesting that actually I didn't even realize were interesting.

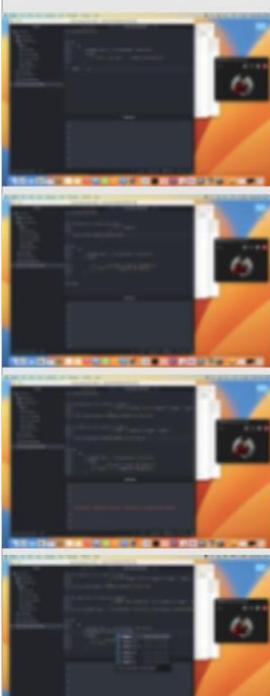
R: Did you find any unexpected findings by doing this reflection and stuff? I think we kind of answered that in a way.

P5: Yeah, definitely. Yeah. Yeah, lots of unexpected findings, I think.

R: Yeah. And the other part that is why, but I think we've said this.

Miro: Session 1

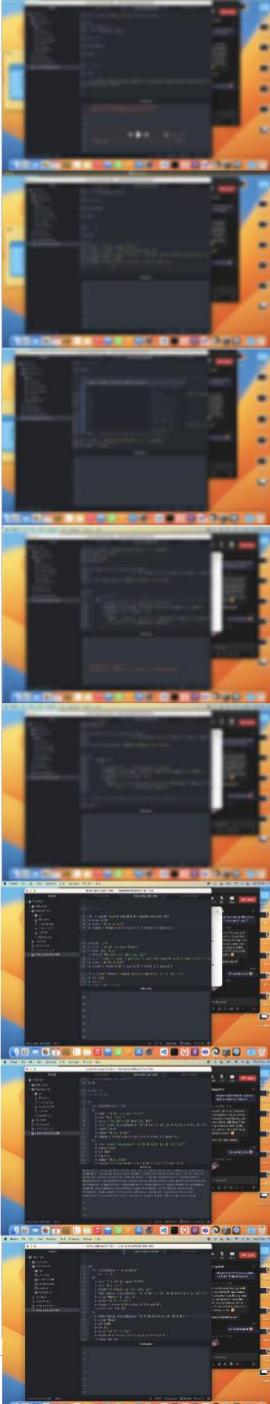
Reflection 1:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
 <p>Started off making some drum patterns by re-examining existing ideas, separating them into individual parts and applying effects, re-examining the sonic quality many</p> <p>Copied and pasted current process and applied it to the bass..</p> <p>Spent a long time reflecting trying to find the right sound for the bass</p> <p>Trying to find more sounds that I would want to use and thinking about the direction I wanted the piece to go in</p> <p>Started "zooming out" reflections, thinking about decisions and how they applied to shape the compositional structure, rather than individual sounds themselves</p> <p>Thought more about how to structure the piece and decided to use a different logical structure in the code to bring in and out the various parts</p>	 <p>Moved to testing out using a function that I've been enjoying lately which converts numbers into binary strings. I did this and I've to use as more patterns. This involved a lot of experimenting with changing numbers and seeing what happens, and this for the kick drum</p> <p>Did a lot of changing numbers with the rhythmic patterns it would produce. Testing in conjunction with the kick drum pattern</p> <p>Tried out a sample thinking it was sounding etc. actually type wrong thing but it turned out to be more interesting than what I thought, which shifted what I was trying to do in a new direction</p> <p>Used the function applied to the drums on this new sonic quality and it made it sound weird and wobbly which I liked.</p> <p>Tried out different combinations of drums/bass/bell patterns at the same time to see which ones sounded best</p>	<p>Found a new sonic quality that I didn't know would be interesting</p>	<p>Reflection through surprise maybe?</p>

miro

Miro: Session 2

Reflection 2:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
 <p>started a new session by generating patterns and the agent reflected on the sound outcome and whether I liked it. Wanted to add a bit more intrigue to the pattern it produced</p>	<p>Added a lot more different functions to it and tried to shape the sound in an interesting way by adding more effects and rhythmic variation</p> <p>spent some time continuing to generate new patterns with the agent. Various sounds were produced, trying to make something that would complement the first pattern produced</p>		
<p>moved away from trying things with the machine agent, and started programming drums again</p> <p>went back over everything made last session, evaluated what I liked and didn't like, kept the kick pattern as I liked it</p>	<p>Spent some time searching and experimenting with sounds to use within the same pattern that would be interesting</p>		
<p>sat and thought for a minute, there was something not quite right and I wasn't sure what to do next</p> <p>made the decision to go back to the agent and generate new patterns</p>	<p>Agent produced a baseline... Spent some time with it editing things to make it work</p>		
<p>Found that it wasn't working so deleted it</p> <p>reflecting on the melodic patterns, found something was still missing.</p>	<p>Listed out all possible scales that can be used in Tidal/cycles, and tried out many of them to see what would work</p> <p>tried out the cowbell sample again, it didn't work this time, so removed it</p>	<p>Realised the mode/scale I was working in was one that I didn't particularly like</p> <p>Through trying many different scales, got a better understanding of ones that resonated with me</p>	

Miro: Session 3

Reflection 3:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
 <p>Before starting, tried to think about how to write this time, decided to start with human-built drum structure and work around it</p> <p>Went back to the agent and used it to try out some ideas</p> <p>"zoomed out" focus: started thinking about which parts of the composition to bring in/out at various points - using a mixer to bring in certain parts</p> <p>Felt like it needed a melody- so went back to the agent to try and generate some ideas</p>	<p>Tried out different combinations for the kick patterns</p> <p>Continued working on building some drum patterns, trying out different sounds together to see what worked and what didn't</p> <p>Reflected on the melody pattern; felt like it needed a different timbral quality -> tried out lots of different sounds but then ended up reverting to the initial one</p> <p>Also tried out different scales again, but couldn't find one that fitted in with what I wanted</p>	<p>Realising that I like a finer level of control</p>	

Miro: Session 4

Reflection 4:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
 <p>Started off thinking about how to proceed and decided to stick with composing without the machine agent first</p> <p>Came back to working with the agent again to see what new things it could produce</p> <p>Decided to try a new approach with the agent: I would generate lots of different functions and then paste together ideas from everything new it had generated</p> <p>Got to a stage where the basics of the piece were done.. so had to stop and think about what comes next</p> <p>Went back over earlier sounds to pick out something that might sound good with what I already had</p> <p>Did a first record but some of it sounded too "busy". Listened to the structure and decided to make last minute changes to free up some CPU usage</p>	<p>Tried out some more musical ideas to start building up the track</p> <p>Changed a few of the samples after building the patterns</p> <p>Experimented with changing numbers to really extreme values to get a certain effect which I liked</p> <p>After listening.. Made some final changes to samples and numerical values to help shape the sound</p>	<p>Still thinking about how I want to control an agent and what is most useful to me</p> <p>Reflecting sonically on how to produce interesting glitches in the sound and how that translates to music that I like</p>	

First-Person Account (Unedited First-Draft)

Working with live coding as the medium, ideas are notated through computer code.

This allows the live coder to abstract ideas, releasing them from the obligation of convoluted or burdensome gestures and can allow them to tie complex behaviours to simple gestures. Although natural language and programming languages are ontologically distinct, programming languages provide a way of interfacing with computers and music technology in a human way.

The live coding agent I have built is useful for different factors in composition. Mainly, the agent allows the live coder to explore parts of what Boden (2009) refers to as ‘the conceptual space’ (i.e. a cognitive framework or multidimensional mental landscape where different ideas, concepts, or representations can be organised and related to each other) that they have not yet generated by their own cognitive processes. The contrast or complementation of the agent’s produced patterns of code is designed to provide some creative impetus for the live coder, either through patterns that are intriguing to the performer or audience, or through shaping the outcomes to match aesthetic preference.

Throughout the composition process, the agent was useful as a tool for this particular challenge. In the composition sessions, sometimes these started with generating ideas at the beginning of the session, which allowed me to follow a specific thread of interest and have an idea to work with from the start, whereas other times I started the composition process from my own ideas and used the machine suggestions to move in a different direction.

When working with the agent, I noticed there were three different levels of observable composition happening---the human live coder composing without the agent, the machine agent composing without the human, and the human shaping the live coding agent. Where reflection occurred in each of these cases varied, depending on our understanding of what reflection actually is. Reflection is often understood as the act of ‘sitting back’ and examining either the entirety or a portion of written content. This process often aims to foster the creation of novel concepts, establish connections among various cognitive frameworks, modify current ideas, and planning where to go next. Reflective thinking typically occurs in a cycle, where the individual alternates between active involvement in a task and periods of reflective contemplation (Wilson et al., 2023).

Where the patterns were solely created by the human live coder these reflections scoped most of the definition of reflection, from the creation of new ideas, modifications of these and the decisions to move in different directions. Some of this reflection came through errors made. For example, at one point, I was looking for a specific sample and typed the wrong number. This error prompted me to explore a different sound than I might not have considered. When working without the agent, there was also the need for meta-level reflections, where the use of abstraction through code meant that understanding the relationship between the code and the outcome was not simple. For example, one function in TidalCycles I explored in these sessions was the use of a binary function—which converts numbers (e.g. “1234”) into binary representations (e.g. 10011010010). This result of the binary function is passed to trigger a specific sample to play where ‘1’ represents the

sample playing and ``0'' as a rest. You can hear the result of the pattern but its relationship to the code is difficult to discern. Reflecting on these patterns was more challenging, as there was not one-to-one correspondence in understanding the way they were going to sound.

Where the patterns were solely created by the machine agent, reflection materialised in a few separate ways. Firstly, where the agent produced a pattern, this was then evaluated against the human's aesthetic preferences. The generation process of the agent has inbuilt metrics of modelling human aesthetic choices. However, a lot of reflection still occurred around evaluating whether patterns matched aesthetic preferences of the live coder. Patterns were evaluated with an internal aesthetic function in mind, to try to express a specific affective state. By evaluating the pattern before and after running the code, the patterns were tested against this aesthetic function to see how they matched with this internal aesthetic function.

The process of the human shaping the live coding agent involved using this internal aesthetic function, and the human would then decide which elements of the machine generated code were creating misalignment with the human intentionality. These patterns sometimes prompted me to recursively hybridise, blending the machine's computational creativity with my own artistic insights. This fusion of human and machine capabilities demonstrated a step toward a new means of artistic expression, one that leverages the strengths of both entities to produce compositions that would not be conceptualised by the human live coder alone. The reflection that occurs is not just a passive process but an active, dynamic, and iterative engagement with both the creative process and the output.

Overall, there were also structural reflections that occurred during the composition process, switching between generating ideas (either coding them or generating them with the agent) and refining ideas. These structural reflections took place, when switching focus between the micro-scale and the macro-scale. On the micro-scale, I spent time looking at individual blocks of code that formed distinct parts, different drum hits (e.g. kick drums, high-hats, snares etc) or basslines and shaping the finer details. On the macro-scale, this involved reflecting on how I wanted the overall composition to sound, i.e. what timbres aligned, where different parts should be brought in or taken out, and how the final composition should be structured.

Finally, the experience also sparked significant self-reflections. These occurred in understanding the affective states that were driving my internal aesthetic evaluation function, and through considered, deep listening (Oliveros, 2005), forming an understanding of myself in relation to the music. There was also an understanding that came from performing with the agent over the autonomy of control desired in performance. The creative impetus that it provided, although helped steer the composition in new directions, also meant that there is some relinquishing of control. This dynamic of collaboration prompted me to consider how the evolving relationship between humans and their machine counterparts in creative endeavours will be shaped in the future. Perhaps humans need to learn to accept some lack of control, viewing it not as a loss, but instead an exchange for new creative ideas.

P6

Interview: Session 1

R: OK, so please talk me through your process and what you did in the session.

P6: So I had like a I had a- so the plugin wasn't there because code uh, so the first thing I did was build the plug in. I had a project from yesterday that I was using to test the plugin whilst I was working on it. It was a very small little project that had like 1 channel in, but I opened it because I was just like well yeah, this is what I'm going to start with and the plugin was kind of working but I couldn't use it so I it was making sound and it was working fine but I couldn't like change the parameters on it or anything. Now it works by kind of it. It takes in audio and outputs audio, so it it, its effect is responsive to what you give it. So it was just like that for this session. I'm just gonna let the new one build in the background and then I'm gonna just mess about with the one that's working and is there and just send some shit through it.

R: Yep.

P6: And so I wrote this little like beat thing, and that was quite into- it was pretty heavy.

R: Uh, it's. So when you say beat thin is this a few MIDI notes beat or is this audio coming in?

P6: So there was like basically I put a bassline through it. I did something quite quite weird actually, so I put bassline through it and I put a tremolo on the bassline and the tremolo was set to the like randomly change.

R: OK.

P6: And now where every time it pings up and down the tremolo, it's sets off the resonator drum. So you get these like right now because like ping ping, ping, ping, ping but it's the sound, so you get both bass and this thing Ding Ding Ding at the same time. And then I added like a just a percussion rack from an Ableton percussion rack. I just picked one and wrote something over the top a bit. Uhm, and this was cool. I was really into this idea. I kind of mixed it with some leveling here and there brought out the things that I like about it. I wanted to come up with another idea. So to kind of give the thing some form, because you asked for a minute and I was like, OK, I'm gonna write a one minute beat.

R: Yep.

P6: And I came up with another idea using the resonator where I was just kind of sending now melody notes through it instead of base notes and it was quite cool because it would like different melody notes would activate the jump differently. So you'd get some that were really ringy and some that were kind of dead. Uh, but the actual sound that came out at the end? Kind of sounded like a hand drum. You know the like metal thing

R: Uhuh Yeah, yeah, yeah.

P6: I didn't really rate it. Uh, and I found it, like quite difficult to link the two things together, so I ended up kind of just refining both of them and then kind of sitting backwards and thinking now, OK, how do I actually want to do this? How do I wanna write music with this thing? Because I can blah blah blah and that's basically the whole hour. Just me dicking about with plugins.

R: Yeah. OK so. Could you talk me through the different reflections that you written here?

P6: Umm, so most of them are kind of just pointing out what I did. Um, like the the moments I thought were important. Uh.

R: So if I look at this one here, you say.

P6: Yeah.

R: Umm I used this as a springboard to make my first idea right.

P6: Yeah.

R: Could you talk more about that?

P6: So this is kind of like. Uh, basically the project already had this like bass note running through the neural resonator I guess so I had an idea of how this like bassy resonator sound. Yes.

R: Uh-huh.

P6: Uh, and I just kind of added it like all of the random LFO thing. I kind of added that and then um I rewrote different bass part and I didn't use the original one. I changed the synth that was at the front like I changed everything about it, but it had this like Sonic quality about it that was like OK cool. If you send the bass note through it and you do this kind of like tremolo thing, you can get this kind of bass note. That goes boom thing boom thing boom thing. And that, that was the where I was at. So I kind of had like a very clear sonic image to work with, like right from the get go. That's why this thing was really important to me.

R: Umm. And so that Sonic image, that was something that came out of playing around, it wasn't something you had your head beforehand.

P6: Yeah. Yeah. Playing around. Yeah.

R: OK. Umm.

P6: Like before, yeah, it's not. Yeah, it's not something that I kind of sat down knowingly being like. Yeah, I'm gonna do this. I kind of was just like, OK, this thing kind of sounds cool. I'll go with that.

R: Yes, so. OK, so let's go for this one right. You say you wanted to write something with form.

P6: Yeah.

R: Uhm, and so you found a couple of ideas, and then you're using some scales here. Um, are these similar to the kinds of things you would normally do. Or is it any different or?

P6: Umm. I think it's not too dissimilar. In many senses, right. So you you - I think sometimes. There's like a there's like this. There's like a distinction between different ways of kind of like making music. I think one way of music is kind of one way of making music is that it just kind of like flows out of you improvisatorially. So everything is in the moment.

R: Yep.

P6: The thing that I'm doing now is the most important thing, and that's all I need to think about, but in this instance, and this does happen a lot as well, where it's kind of like, OK, I've had a musical idea, I've refined it. I've maybe kind of like explored it a bit or made something out of it. I kind of wanna structure it in a different way, so I'm kind of thinking about it as a building block that I then move from. To answer your question, do this all the time- I do it like 50% of the time I'd say or 40, nah probably 60 more like positively. I do this in the most, but it's not the only way I do things.

R: And so you also put that in a reflection on self.

P6: Yeah.

R: So I wonder, how did that connect to? I guess yourself and your practice.

P6: I mean, I guess. I'm wrote it in reflection of self because I wasn't really thinking about the material at this point. I was thinking about something a bit bigger. Uh, like the? Like what I, like as soon as you start, as soon as I personally start talking about things like structure and form so- suddenly it becomes this like it's quite reflective about how I wanna see something in uh or how I perceive something. If you feel me uh, like do I perceive this idea as having this kind of weight or that kind of weight? And where what? Whatever ideas do I have in my mind, that kind of, uh, complement or accentuate that? Do you know what I mean?

R: Yes. So that also where you have like this one here we say I made some fat drums to complement the newer ones.

P6: Yeah.

R: Is that where you are going? I wanna add weight to them because you've done this sort of reflection thing where you thought this needs to be bolstered by some, uh, complementary sounds, maybe.

P6: And no, that was quite mediate. It's quite instinctual that, that movement, whereas the difference between these two is, yeah, that was really instinctual. Like I was like, OK, there's the sound. I'm gonna add some. I'm gonna add drums and they gonna sound like this. And I had a very clear idea, and I had literally just transcribed what was in my mind.

R: Where was I guess the this is more about the broader structure, yeah.

P6: Yeah. And I know I sat back and I thought about it. I wasn't just quite. I wasn't just kind of impulse. If you feel me- there was time taken here in this, this, this one on the right, then there was in the one on the left, the one on the left was immediate and sensory.

R: OK, so this bottom one here you're talking about, you want to structure it for the rest of the day.

P6: Yeah.

R: Umm could you elaborate for me please?

P6: So I thought about how I wanted to approach this project like today. I thought about it already, like I'd had an idea in my mind about how I wanted to, uh, work with the materials that I had. And so far I haven't done that. Basically why I wrote that?

R: Umm.

P6: Um, like, I've just kind of been having a bit of fun just warming up. Really, I think it feels like that anyway, like I've had this, like, kind of cool idea and I just messed about with it. Uh, so initially what I wanted to do was do you want me to tell you?

R: Yes. Yeah, yeah, yeah.

P6: So initially what I wanted to do and what I probably intend to do and is not really trying to think about form immediately or anything like that, but to generate just generate loads of ideas that are again disjunct. Kind of what I have been doing, but on a more of a rapid.

R: Yep.

P6: Pace so I generate loads of these ideas and then I cut them together. Basically like a create a collage of all of these ideas that I've had and maybe some get thrown away. And maybe some aren't good and and maybe some turn up and places that I didn't expect them to initially, but it's or on emphasizing in that thing is I'm not, I didn't intend to be thinking about like structure and form at this point in the day. I just should have been thinking about making loads of little ideas and like a broad palette to then work from and as well because I couldn't touch the interface of that plugin, which I can do now. I just need to restart Ableton.

P6: Uh, now I can kind of do that in a bit of a better way. So the idea is to like. Not arrange something with like MIDI and automation or anything like that, but to just record the output of the plugin, I'm.

R: OK. Is that what we mean by broad, broader brushstrokes then you sort click material that's slightly a denser range of ideas.

P6: Yeah, I mean, I guess, I mean like by, by broad. Yeah, that is what I mean. I think like I do just mean like generating like a minute of material or like 30 seconds of material rather than being like yeah, let's bring out that drum at that moment.

R: Yeah. Yeah, yeah.

P6: You know, that's a very fine, detailed brush stroke. And yeah, just creating these like, big uh, I just worked on a project similarly where this was kind of the mindset. So it's really fresh in my mind. I've been like generating loads of like kind of material on its own.

R: Yeah.

P6: That's kind of a bit weird, but then like stitching it together to make like a collage is kind of something that a little bit familiar with at the moment.

R: Yeah. So what's that project? Can you talk about it?

P6: Yes, I just wrote um, it was a collaborative project with a friend of mine called [ANONYMISED FOR REVIEW], and we did a piece for player piano and the method was just kind of like you have these. We've made loads of devices to kind of like generate like swathes of MIDI. So like oscillators and um, like things that did that did automatic harmony and stuff like this and so you could create these like unplayable, like piano sweeping riffs, basically. Yeah. UM, and you know a big part of the project was just generating like, like I said, the 30 minutes, 30 seconds, a minute of material using these like little plugins and stuff. And then when it came to actually composing the piece, it was much more of like stitching them together. And um, then thinking about the moments. But that happened very later on. That happened much later on during the process, rather than kind of, uh, as part of the process. Do you understand what I mean? Like as a part of the process, like it was never. It was always kind of like what- it was very clear, like big ideas get to turn into smaller, like turn into more detailed ideas rather than big little big, little big, little big little, yeah.

R: Yeah. OK. So, OK, two quick questions and then we'll end this bit. So is there anything that stood out as super important or very surprising?

P6: Super important, very surprising. Um. I mean the sound at this thing like still surprises me. Like I'm not. I haven't used the neural resonator plugin enough to not be surprised by the way it's sounds.

R: Umm Yep.

P6: Yep. So. In and of itself, is still kind of surprising, I think, because it responds very differently to different types of material.

R: Do you find that sparks the direction you go in?

P6: I mean, yeah, totally, totally, totally. You work with what you got, but what? I think that I've been from doing these kind of literally these kind of tasks in the past. I like, it's important for me to kind of work with the material and not against it. Like, that's a big part of it- is kind of, you know, and like working with the way the thing already sounds rather than kind of having a very conceptual idea of what some it might sound like and trying to force it into that box because that doesn't really work. A lot of the time or it.

R: So that's something you're quite comfortable with and your artistry, right is to take that, umm, step back and go with the changes as they happen.

P6: Yeah. Yeah, yeah. Or or me more what I'm saying is just to keep your artistic ideas kind of open to the like responsive to the thing that you're working with rather than just kind of like having a very clear artistic idea. Like I'm going to make something that sounds like this and going gun ho to try and do that. Uh, I think that's that's a recipe for disaster in my experience or not. Disaster, but just for a lot of wasted time.

R: Yeah.

P6: So yes, I'm comfortable doing that.

R: OK. OK, so if you have to summarize what you just did in one word, what word would you go for?

P6: Uh cooking.

R: Cooking. OK.

Interview: Session 2

R: Please talk me through what you did your composition process in the session.

P6: So I had a lot of fun man. I had a lot of fun. So, uh, I think that at the end of the last session I talked to you about the whole way I wanted to approach it. Like I'd preconceived about generating loads of material and and just kind of making broad brush strokes.

R: Yep.

R: And I did that basically, though the whole time. So I just kept like I would make a channel. I would drop a load of stuff in it. I would root some audio to it and then I would fuck about with some effects and then sorry, can I swear in the interview

R: Yeah. Yes. Yeah.

P6: I messed about with some effects. Uh. And then, uh, recorded, there's the sound that I made. And then would just do it again. And sometimes I run the the sound that I just recorded into the new channel, and sometimes I would just completely start again and keep doing this. So, a big thing about the process that I did was kind of like make a sound and then process it again and then process it again and then process it again. And this is always going through the resonator. So I would make a sound and put through the resonate of record it and then I would put that recording through the resonator and then record it and I would put that record in through the resonator and record it. Umm. And I just did that over and over again.

R: OK

P6: Uh, and sometimes I kind of like performed whilst I was doing these recordings. Sometimes I just hit record and let it go. And yeah, that was basically the session.

R: OK. Yeah, sounds good. So talk me through the post it notes and reflections.

P6: Umm, so I'm now using the plug in so it didn't work in the first session and now it now it's working.

R: Yep.

P6: So that's the main thing on the right that like that now works.

R: So do you? Um, draw the shape in like with a pencil kind of tool or.

P6: Uh, you can move the say like randomly generates it, but then you can kind of like sculpt it. Uh, so you can kind of change. So you have you always have a shape basically, but you can kind of, yeah. Deform it or and you move the strike location around which I tend to do. Uh, a few times.

R: Yeah. Yes, that'd be my question right. Did you what did you tweak?

P6: So I actually, so I tweaked the the shape and everything when I first started and like where the stroke was. But most of the time I actually tweaked the physical parameters of the system.

R: Yep.

P6: Uh, which is cool because that's mainly like the neural part. The neural part is all the physical modelling stuff, right? So I just tweaked the physical parameters and basically the way it was designed, it was designed to learn them between like a set range, but then the plugin actually exposes them like outside of that range. So there's like certain values that you can access through the plugin that are kind of undefined. Do you know what I mean? So it's just the neural network doing its thing. Uh, which I always think it's quite cool and the the version that I have on the Bella, which I don't have today because the Bella version is

definitely a work in progress. Uh, does this even more extremely and you can create really weird sounds, so it's just messing around with physical parameters.

R: OK. Umm. And so let's go for, OK, let's talk about this post. Let's start to look at this kind of. So your process was you went to start feed things back in and do this kind of thing, I guess. What was the reflecting- reflecting behind that? Was it? What were you thinking?

P6: I mean, I was trying to thinking about the the, I mean again, I was starting to think about this idea form and uh structure like whenever I talk about my reflections on the self. It's not so much about me thinking about the way that I do things but about what I'm currently doing and how that impacts my future self.

R: Yes, yeah, yeah.

P6: And if you feel me? Umm, so a lot of the time I was just thinking about, OK, so I'm making this stuff and then how can I then what will I what will I eventually do with it? Like I'm making this thing and I'm recording it and I'm making these like stems for lack of a better word. But then how will eventually use them, so I would take moments out of the thing. Usually one thing was recording to just think about what I could do with it and then would entertain those thoughts and then just move on to do to do it again basically. So I would like, yeah, I would think ahead and then just repeat the process basically.

R: Yeah. And so that was sort of a more sit back, that kind of post-it note, and then down here, we're talking about this recording yourself and experimenting more in the moment kind of thing, I think.

P6: Yeah. Yes, it towards the end of the session was when I really started to be like quite performative. Like I had at this point, I had like a lot of stuff on the screen, so I could just, like twiddle knobs. I would just hit record and twiddle the knobs.

R: Yep.

P6: Whereas when I first started, I didn't have so much and it was just like, oh, this is a good sound. I need to get it and I would just hit record and like let it do its thing.

R: And so this last post-it note, umm, is interesting, right? Could you talk to it?

P6: What I think. So I guess like. At that point it felt the, I guess what I'm saying when I say like the performativity part of it, that actually felt like quite familiar. That felt like how I would explore so it that's me talking like so the 1st post-it note that's in this column is me talking more from a composer's perspective and thinking about how to use materials and how to kind of structure a piece of music out of them, whereas this latter post-it note is more me as an improviser and I found that like, you know the the- what I was actually doing was more closely related to that aspect of my practice than the kind of I'm sitting down and I'm writing some music part of my practice.

R: Yeah. Because you talked about before, this distinction between the two right one way it is flowing out of you and it's improvisation and you're sort of doing the decisions in the moment. And then this second one, where you're sort of maybe exploring the decisions and thinking about structure- and so did you move more towards this sort of in the moment kind of thinking towards the end of this session?

P6: Yeah. I think the overall the session was very in the moment like the whole thing was quite in the moment like there was. I did obviously reflect on this idea of what can I now do with this stuff, but like as I was making it, but for the majority of it I was working very much in the moment. Just kind of responding to how I felt and. Coming like rapid, rapidly iterating through ideas like, I think that's kind of what, uh, that's what makes it quite familiar. The ability to kind of like quickly just be like, yes, this and be there. So I check with that in there. What's that gonna sound like? OK, it sounds like that. Uh, and having that very immediate kind of.

R: And so you've the right write the post note here and whilst the sounds themselves were new and exciting, right? Yeah. So I suppose, do you put that down for this novel resonator tool or?

P6: Yeah, I mean, like, I, I admittedly, I haven't really used this in- this plugin like a lot within my practice. Yeah. I've obviously used it, but I haven't spent lots of time. Umm like yeah, using it in pieces. I've never done a gig with it, for example. Uh, So what more what I'm saying is it's like the actual process of like doing something and kind of going through like the the performativity of it is very kind of like a familiar process that's kind of and making quick decisions and nudging things just a bit to push them in certain like to push them in different directions.

R: Yeah, yeah, yeah.

P6: But the actual like response that I was getting from the sound was different than what I would anticipate if I was just doing it without the neural resonator.

R: Yep, OK.

P6: So it was an explorative process rather than the kind of, um uh, methodical process. Do you understand? Yeah.

R: Yeah, yes, yeah.

R: OK. I think we talked about things that were surprising there. I think I don't need to ask that question. Umm do you wanna summarize it in one word?

P6: Uh, I'll... conducive.

[Interview: Session 3](#)

R: OK. Please talk me through your composition process and what you did in the session.

P6: OK so I made loads of stuff in the last session right? I made loads of materials and like I recorded loads of stuff basically.

R: Yep.

P6: So my main mission was to just like, stitch it together and start to make something that sounds like a piece of music rather than stuff that sounds like sketchy ideas.

R: OK.

P6: Uh, I did this quite well, I think. I think I did a good job. I explored a few different options quite rapidly here and there. Stuff that I threw away the end, but what I came up with was pretty good. Uh, and then towards the end I noticed like in the very first session when I was recording material, I didn't do an amazing job or as an amazing job as I did in the second session. So I had loads of gain issues and some of the sounds like just weren't as good as in the first session as they were in the second session.

R: OK.

P6: Uh, this is when the plugin that wasn't working properly.

R: Umm Yep.

P6: So I'm kind of umming and erring whether to go back and rerecord some of this material or kind of leave it like develop the other ideas and leave it with this kind of shitty sounding ending.

R: Yeah, yeah, yeah.

P6: Uh, but essentially the form of the thing is just upwards. Uh, there's no kind of like. Verse chorus thing going on. It's just a section B section C-section C-you-later section.

R: OK.

P6: Which is pretty cool, but yeah. Uh, I like to. Liked the sounds that I'm working with, and I think it's that it's. It's a bit of an intense piece of music, though I will premise this now. R, you gonna have a?

R: Yeah. What an intense, crazy?

P6: I yeah, it's in the it's just a bit of a dark piece of music.

R: Ohh is everything OK? Do you need to check in?

P6: Yeah. No, it's very raining outside and I'm in the music room- but I did a lot of one thing I'd like to stress about this session is I spent a lot more time doing like this. ((Stands up away from the laptop in the room)). Listening from like here, than kind of like fiddling in the

project than I have done in other sessions like there's a lot more standing around kind of listening and thinking about what it was as a bigger piece of music rather than the smaller detail. Broad brush strokes is happening right now.

R: OK, so when you were? Oh, how to phrase this in a way that isn't a leading question? UM. So when you stood up and you were listening, I suppose, what were you listening for?

P6: Um, Well, I mean, there's a lot of things, right. Um, one thing is I'm listening for is like consistency amongst the material. So some kind of like. I'm thinking about it like a narrative. If you feel me- like being away from the computer allows you to take in things in larger stretches of time than stood at the computer, like dicking, like clicking about you, can you can scrub that from the transcript.

R: And so what's it, um? You talked talks in the last session, was sort of performative and you had material when you were thinking, would I use this later or, you know, you're sort of thinking ahead in that sense.

P6: Yeah.

R: How was this one different or the same as that?

P6: So this one wasn't performative at all. This one was like compositional in like the right the the like.

R: OK. Yep.

P6: It was very much about thinking about things like sections. It's very much about thinking about transitions. It was very much about thinking about development of single ideas rather than just kind of this flowy. Um, just churning stuff out. Kind of approach? Umm, it doesn't mean it was slow like the pace was. That doesn't actually mean that the pace was slower, but it does mean kind of like the actions I chose to do were different than in the first one. If you feel, me like they're the approach that the material, it wasn't generative experience. It was a it was an assembly experience.

R: Yes, I'm more thinking about. Yeah. You're not just coming up with ideas. You're sort of looking at the ideas and testing them, you know, I guess, yeah.

P6: Yeah, was thinking about form rather than like it's about. So the the high art in me would say that this this one was thinking about form and the previous session was thinking about material.

R: OK. OK, cool. Um so. Yeah, we already, we already done a bit was talking about this idea of when you say reflecting on self, that's when you're thinking more about the form of the piece and these types of things.

P6: Well, it's it's, I guess like it's a, it's a weird kind of analogy to draw. Of like I'm thinking about form, but I'm thinking about the self. I guess it it. Yeah, I guess it's about thinking

about how the my, the, my, the self, the self in the moment is then the self in the bigger picture, you feel me?

R: Yes. Yeah, I I think.. something to dig into, maybe, but no... that was good.

P6: Deep Monday with P6.

R: Ohh no, it's good. It should be super deep. Umm. And so you're also written in this. I'm looking at this bottom post it. You note mistakes you've made in the first session, so if you could elaborate more, you already talked about that at the start. I think saying some of the recordings weren't. Uh, as good as you thought when you sort of look back at them in this session, so if you could talk more about, you know, mistakes, do you mean mistakes or?

P6: Yeah. I do kind of mean mistakes. Yeah, because it's I can made productive. I made decisions as a producer that then limited my decisions later, which in my books is a mistake and... It doesn't necessarily mean that I Oh well, it doesn't have to be a mistake. But when those are the wrong decisions, it's a mistake, right?

R: Yeah.

P6: If you find yourself in a position where you are then limited, it's a mistake. And that's essentially what happened. Like there's this part of the tune that I get to now, which doesn't sound as good as I would want it to, and my option is to then go back and remake the material. There's nothing I can do about it from a post-production standpoint or a like cut and cutting kind of scenario.

R: Yep. Hmm hmm.

P6: Tell me it just be to regenerate it, which is annoying.

R: And so yeah-

P6: I haven't decided whether I will do it yet, but I could do it. I think I'm gonna like basically the the mindset. I would then go with is like. I'll put that idea to the side. I'll concentrate on the ideas like good work with them and then revisit the less good idea.

R: Yeah, but what do you blame for? The bad ideas.

P6: It's not that they were bad ideas, and I think so. If you remember in the first session, uh. The difference between the first session and the second session. I actually said that, uh, I want it to be really open to the material which changed in the second session, right in the first session. I definitely was kind of more like going with what the sound in my head was, so I make decisions about the sound that we're kind of, uh, I don't wanna say artificial, but in post I made decisions about the sound that would then imposed upon it. And which now that I have all of this, I have this thing that has arrived from being opened. This bit that's now has this imposition on. It sticks out if you feel me.

R: Yeah.

P6: That was quite a wordy way of saying it, but I think that's correct, yeah.

R: No. Yeah, I understand. That sounds good. Umm OK so. And I'm pretty happy with everything we said. So do you wanna go through one word summary?

P6: Uh, one word summary. Oh oh. A collaging.

[Interview: Session 4 & Post-Task](#)

P6: I OK, so this session was kind of the kind of the same as last time, like it was coming from the same kind of place, but there was much more in detail going on. So most of my attention is focused on the transitions between. So basically, last time I felt that I had sketched out the rough sections, there was three main sections. One of them, I wasn't very happy with because of the recording mistakes, but there were three sections, and for this session mainly what I did was, uh, fixed transitions. So the way the material like moves together and develops. So it wasn't just like idea, idea, idea. It was kind of, it sounded through composed. Um I embellish certain features. I did a lot of mixing. UM, it wasn't too much. Kind of, uh. Yeah, there was a fine tooth comb going through it. And basically the point that I got to was the point where the only thing I felt I had left to do was mixing. Like I could maybe right? Like there doesn't mean say I've written the best piece of music of all time. Uh, but you know, going through the process, I made an arrangement. It was through composed. It had all of the material and ideas I would come up with and anything I'd do besides, basically start again or carry on or blah blah blah would be to just mix it. Just literally like plugins.

R: Yes. Yep. OK, I'm looking through, I think that kind of it's kind of explained all these post it notes. Umm, one thing which we could talk about is coherent, like the word coherent. And is that like a? Tell me about that.

P6: I mean, OK, so I'm gonna. I'm gonna say talk about it kind of in the way. So I talked to my students about this kind of stuff, like when I'm teaching about this kind of thing, and because I think it's one of the most like, important things that you do during the creative process is like or one of the most important things you should aim for during the creative process is coherency. And I yeah, from a far away standpoint, it's kind of there's a lot of like sensibility to it like you wouldn't jump from a country during to drum and bass and back again like that would just be too much. It would not work very well, but really on like a more like airy sense. I'm talking about coherency between who I am now, who I was when I made the ideas and who I was when I made the individual ideas. So there's kind of like, you know, there are these moments in time that kind of materialized. And now I need to stitch them together into something that is emblematic of how I currently feel and how I felt then.

R: And so does this connect to this idea of um? Ohh, we were talking about reflection on self and in self being this. UM, we've got to try to remember it properly from last time, but sort of like a metaphor for this structure, you know, is are we moving through? The self is the bigger picture, right? It's that kind of yeah. Did I get it right? I'm sort of just saying words, yeah.

P6: You do. You are getting right. I I you know, I I said about it. It's kind of confusing to be honest, but the, you know the self is like it's about looking. I get, OK, a better way to kind of like phrase this idea is that when you're in the moment and you're doing something immediate, so like you're just generating material and it's improvisatory you're just you're focus, your attention is on the thing itself.

R: Yep.

P6: And then when you are outside of that mindset and you're thinking about the bigger picture, you're reflecting upon the things that you've just done or the things that you did before that and how they blended together. You're kind of looking at your own decisions, but from a third person perspective.

R: Yep. OK, yeah.

P6: So it's like a there is this kind of outside thing?

R: So you were looking for coherency across, but decisions you've made at these points in time is that?

P6: And also kind of musical coherency, like, they they sense of coherency isn't just like uh yeah. So this the this bit sounds distorted and then it gets more distorted. So that makes sense. It because like as in I made the decision to make one of them very distorted and one of them not very distorted.

R: Yep.

P6: It it it's about. Yeah, it's like how these ideas develop and blend into one another. Uhm, rather than just, uh. Actual like what? The material is, so narrative thing is what I'm trying to say, narrative thing.

R: Yep, yes. Yeah, yeah. OK. Umm, anything surprising happened or super important?

P6: Anything surprising happened. Uhm. Nothing too surprising, I think. What was kind of funny, I think I haven't. There's a certain quality to the piece of music that I wrote today that was kind of nostalgic of music that I wrote like a few years ago. Like four or five years ago, and it's like quite quite bassy and intense and quite fast. And funny enough, as a result I kind of used techniques in the, in Ableton, in the DAW that I had would have used then, but currently don't really use that much, which is quite nice.

R: OK. Why do you think?

P6: Is it honestly how the material sounds? So I kind of had an idea when I was going into this. It's like you can create these quite like very I'm a bit of metal drum sounds with the neural resonator. Or you can create these like blown out of proportion, like quite abrasive and distorted sounds with it.

R: Umm.

P6: And that was predominantly the material that I used. I used both, but that's predominantly the material that I used and because it had all of this abrasion to it, there was a lot of.

R: Yep.

P6: It callbacks to other abrasive bits of electronic music that I've written.

R: Yeah.

P6: In the past. Umm, yeah, really big AO eights. Just like wow, one running a foghorn next year, he's kind of thing.

R: So, uh, one-word summary beginning with.

R: Ohh summary. Ohh. Ohh. Uh am I guess I would just have to say. Uhm. OK. Coherency. That would be the thing I thought about the most.

To post-task:

P6: And I think that because it was quite a short task like it was just the day.

R: Yep.

P6: Umm, there was quite a lot of, like learned behavior that I used to achieve my goals. For this day, if this had perhaps been a much longer project where I'd spent. Weeks for finding a composition, it would have proved the answers would have been different. There would have been a lot more like reflect actual reflection on the self. Then this immediate kind of like I'm trying out this thing today and I'm using this tool and I have these ideas and I'm gonna get this out of it.

R: Do you think that's also why you kind of maybe went from an esthetic that you liked and we're familiar with in your past as well because you will like I know I like this, this kind of thing and then you would roll with it.

P6: Umm. I mean, I definitely wrote music that I liked. Umm, but the the choices I've made were based on the material rather than like I'm going to make tune like I did. Then I'm gonna make a tune that sounds like these other tune that I made that the the habits that materialized were in response to the material themselves, which you feel like these little techniques that I mentioned only happened in this session, whereas the and at this point, I wasn't really generating any new material. I was just cutting it together.

R: Yes. Yeah. OK, so there's some questions about the whole like process of stopping, looking at screenshots, then putting it all out in my room. So do you think that helps you improve in it anyway or?

P6: I think what it did was. I think what it enabled so something that happens to me a lot in like music writing sessions with. Myself and with other people. Uh is often it can become a case where you kind of very you just become fixated on a single idea or a single thing that isn't quite right, like. And then the session ends up being like. Hours spent on one thing, whereas because I knew I had certain I had certain amounts of time and I had certain like UM, you know, I had so many sessions and they were X amount of time long. I kind of was able to plan very carefully. Like what it was I was doing. So in between all of these sessions, especially like especially over lunch, is what I've never told you this like. I thought a lot about what I was doing. Uh, and and how I was gonna move forward with the the activity. So it allowed me to be very kind of like organized with what I was doing and long it take me to do it, yeah.

R: OK, cool. I'm anything that was really knowing about it. Or how could it be improved I should ask.

P6: This your thing or-

R: Just having to the reflections in Miro and all this.

P6: Umm. I. I didn't really have a problem with it to be honest. I thought it was quite good, like I felt that I did it rather quickly. UM, But that's also a result of me being quite like I say, organised about the what I'm doing and how I'm approaching things.

R: Umm Yep.

P6: Uhm, but generally it wasn't disruptive or anything. I never felt that umm I was interrupted. Like usually, by the time the hour was up, I was ready to kind of like take a anyway.

R: Yep. OK. And was there anything you thought about because of this process that you didn't might have not thought about otherwise?

P6: Uh. I think. Well, one, I didn't actually compose in the way that I initially anticipated. Uhm, most of the things that I've said throughout the day have been consistent, but actually the way I did it wasn't how I expected it to do it. Like not the the idea of broad brush strokes or anything like that, that was that that remained consistent with what I've been saying. Yeah. But actually the the at the acts itself were different than how I expected. Like I used a lot more.

R: OK.

P6: Uh, basically, I only wrote music in Ableton and initially like I expect I got the Eurorack out this morning. Am I was you know, I was considering, like, UM, writing music with the

Eurorack as well. Umm. And exploring different ways that I then didn't do, you know, I mean, so I had a lot of ideas coming into this about how I would approach things and then it settled on a particular way very quickly.

R: Yep.

P6: And that was the only way that I did things throughout the whole project. Umm. Basically, in terms of generating material and kind of sound sound collaging.

R: Yeah.

P6: Yes. Yeah.

R: OK, I'm anything else you would like to tell me or feedback comments literally anything.

P6: Umm. I don't think the vibe of my tune is necessarily representative of my experience writing it.

Miro: Session 1

Reflection 1:

Reflection on Current Process
"Did you re-examine what you'd learnt and find alternative ways of doing things?"



I spent a little while trying to bring out the timbral nuances of both the percussion I'd written and the original neural resonator sounds.

More refining/mixing to try and clean up the first idea, and make it transition more seamlessly into the new hand drum idea.

Reflection through Experimentation
"Did you iteratively generate and test ideas, or make comparisons in the system?"

I had a project from yesterday with a very simple idea already in that I'd been using to test the plugin. I used this as a springboard to make my first idea, but (pic 3) I couldn't manipulate the plugin parameters directly for this session.

Made some phat drums to compliment my neural ones.

This didn't work imo. I made both ideas sonically more interesting - but not closer together structurally/sonically

Reflection on Self
"Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"

Other
Any other reflections on your process?

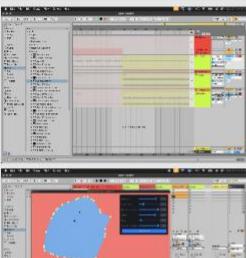
The plugin was not working when I started as I was messing around with the code last night and hadn't copied the correct files into their location...

I wanted to write something with form, so I tried to write an intro to what I'd just written. These ended up sounding like two very separate ideas, and I wasn't too keen on the new thing I'd written. It flirted between Ab natural mixolydian and Ab lydian, but it reminded me too much of hand drums, which separated it sonically from my original neural resonator idea.

At the end of the session I stopped working and listened, and began to think about how I wanted to structure my writing for the rest of the day. At this moment, it might be wise to take a different approach - one that will allow for broader brush strokes.

Miro: Session 2

Reflection 2:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
	<p>Throughout this session I tried feeding weird sounds into the neural resonator - starting with the non neural drums from last session, and then iteratively feeding things back into the neural resonator.</p>	<p>I began to think about how I would arrange these tracks later, by chopping them up or keeping them as long takes?</p>	Bounced the sounds from the previous session, and got neural resonator working. I wanted to simply 'capture' the things I was making, rather than focus on the channel strips and arrange things that way - explorative play!
	<p>I really liked how this process sounded - one is able to create quite rich sounding loops by stacking these channels on top of each other (audio, audio => NR, NR => NR + FX, etc.). I repeated the steps with a new initial material to keep exploring the soundworld</p>	<p>Keeping with the process outlined above, I kept recording myself whilst experimenting with the parameters to continually capture 'new sounds'.</p>	
			
			
			
			

Miro: Session 3

Reflection 3:

Reflection on Current Process
"Did you re-examine what you'd learnt and find alternative ways of doing things?"



Reflection through Experimentation
"Did you iteratively generate and test ideas, or make comparisons in the system?"

Reflection on Self
"Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"

Other
Any other reflections on your process?

I began by taking the last bits of recorded material from the previous section, which I intended to big developing into something with form and structure.

I wrote transitions between the material to curate a sense of development

I also added new ideas by chopping up the previous material...

However when comparing it with other sections of material from the previous session, I dropped it and returned my focus towards the sounds I'd already generated.

Having stitched all the material loosely together, I noticed some inconsistencies with sounds I had already recorded, and mistakes I had made during the very first session. I reflected a lot here on what steps to take in the next session.

Miro: Session 4

Reflection 4:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
	<p>I iteratively went through the transitions of the different sections, the ending as well, and made them all something more composed.</p>	<p>I started by recreating the bass sound that I wasn't happy with during the last session - the one that felt 'imposed' upon.</p> <p>At this point I had added all the material I wanted to use from the previous sections and began developing previous ideas slightly to make each of the three sections more coherent. (Coherency is very important when curating an idea from disjunct materials).</p>	
	<p>Having most of the track completed now, I went back to the bass sound that I didn't like and recreated the same effect from scratch.</p>		<p>Now at the end of my process, all my tasks centre around mixing. There was a lot of low end in this piece - which is unsurprising as all my material was generated from either drum sounds or bass synths. If I were to continue working on it, I would carry on just with mixing - for a one day track, this arrangement is good.</p>
			<p>Final reflections listening to whole piece - tweaking tweaking, often just too much abrasive highs and muddy low ends.</p>

First-Person Account (Unedited First-Draft)

For this work, I used the Neural Resonator VST[3] – a neural network that predicts the modal resonances of a 2D physical model, and uses this information to calibrate a resonant filter bank[2]. Having worked on the development of this tool previously[1], I held a unique relationship with the device. This relationship afforded me the ability to preconceive ideas and compositional strategies, with my prior knowledge being perhaps most crucial at the beginning of the session. At first instance, the plugin was not working correctly, and I spent the first hour of composition fixing the plugin in the background whilst I started generating musical ideas. The Neural Resonator works by taking in an excitation signal and outputting the results of the resonant filter bank - knowing this I was able to continue to write for the VST without needing to manipulate its parameters, using ideas I had developed in previous settings. Instead of using a typical excitation signal such as a trigger, I decided to send various audio materials through it such as percussion and synthesisers. This process had the effect of distorting the original audio in a number of ways, and I used this feature as a means to generate most of my initial materials. Some of the material I liked and explored further, and some I didn't like so much – however this was to be expected. By the end of this session, the Neural Resonator was working correctly.

After the first session, I questioned the relationship I had with the material I had just generated, and felt that I was already too keen to think of form, structure and development. It was important to me to treat these early sessions as playful and exploratory, and not directed solely by aesthetic ideation. As much as I was familiar with the Neural Resonator already, I was not able to use it such that I could clearly audit its product. This kind of challenge, working with the unfamiliar/unpredictable or working without transcriptive realisability, is an issue I have tackled throughout much of my compositional work. This distinction emphasises certain differences between my mentality as a composer and my mentality as an improviser – how do my actions affect my future self/how do my actions affect my present self, what is my creative idea/what is the performed idea, conception/instinct. Adopting the latter mentality encourages one to respond to the material itself – the form of a work is then allowed to emerge without projecting expectations. In response to these themes, I spent the second composition session generating material as rapidly and instinctually as I could. I maintained my methods from the previous session, and continually fed percussive and synthesised material through the Neural Resonator. Often this was done cyclically, by creating a sound with the Neural Resonator, sculpting the sound further with other effects, and then feeding that sound again through the VST. This enabled me to generate a large amount of material that had various inner narratives, creating many threads of ideas from which to develop a composition.

When working through this process, I was often thinking about a previous project I had just completed with ANONYMISED [4]. During this earlier project, we wrote a piece for player piano by generating a large amount of initial material and then blending the results together to form both a narrative and a collage of independent ideas. Throughout this previous process, I felt that I was often pushing myself to compose with very broad brush strokes - curating various lengthy segments of audio to form a single compositional entity. This meant that I was able to work fast, and that my own conception of the composition was able to arise as a response to the material and not as a response to my expectations. This sense was

most apparent in this project's third composition session, where I was stitching together and refining ideas from the previous session to form a cohesive work. Here, my mentality had similarly shifted away from the instinctual and towards the considered, and in many senses so too had my relationship with the Neural Resonator. At this stage in the work's development, my creative decisions were no longer being influenced by the VST, but were instead imposing themselves onto the material it had just generated. This mentality persisted throughout the fourth session, during which I had stopped creating material entirely, and was focused more on the transitions between distinct pieces of material and the overall mix of the composition.

Through experience, I have repeatedly found the process of working in response to material a rewarding and successful methodology. It is not without its detriments, as it is easy to spend time making mistakes/poor aesthetic choices, however it often enables me to arrive at a more clear and intimate compositional narrative. I feel that this method is also particularly important when working with new instruments, or instruments whose outcome is not always what is expected. Unlike instruments of my extended practice, I do not have the same somatic or determinist relationship with them – in the current situation my creative ideas more easily arise through listening and interpreting than through conceiving and enacting. I am then able to form an expression of the self through my previous instinctual responses and explorations. One composes with material generated through immediate intuition, and attaches to that immediacy a reflective and cohesive narrative which then defines the composed expression.

P7

Interview: Session 1

R: So could you please talk me through your composition process and what you did during the session?

P7: Yeah. So I did have. I got contract recently to do some lofi hip hop. Kind of chill beats and for game had ever done that before and I found that quite interesting. So I came into this thinking. Now I'm gonna do something that's a bit like slow piano. Easy. You know large wide open chords or voicings, and although I haven't done it across multiple octaves yet, so started out without access to a MIDI keyboard cause it's broke, pulled up to the sort of virtual keyboard and then found it was only letting me do like 4 voices at a time. So I'd kind of noodle around until I found some chords I liked and and then I drew them in because it's quite hard to- being dyspraxic at least- it's quite hard to hit the record and then press those buttons on this little keyboard.

R: And so that's in the piano roll, right?

P7: And yeah, I drew them in with the piano roll. And I drew them in sort of quantized because I know that my algorithm needs that as input - I should probably have put that on a note, and so I'll add that in a min, but.

R: OK, that sounds good.

P7: Yeah. And then as I was sort of working on this sort of slower nice chord thing, I realised ohh, I don't know what these chords actually are. So I then had to start Googling in the background like, you know, these are my notes. What chord is this? It's sort of gave me a better idea of- the - you know the sort of notes to use later for different layers. Realized I didn't have any string libraries that I liked for at least that tonally didn't really fit the sort of vibe I'm going for.

R: Yep.

P7: So I went download some of those. Then I had to restart the entire program because they don't load and then I decided to noodle on the virtual keyboard doing some violin parts. Ummm, I don't know why it's sort of moved more towards a classically Downton Abbey. Kind of feel away from the low fi thing. Maybe I'll get rid of the strings later.

R: Okay. And then, yes, some reverb, at the end is well, I think.

P7: Yeah. So I decided after I got the nice violin part to copy it and move it down two octaves to have a cello, and then I did the same with the piano chord voicings, but I moved them up two and made them into little staccato notes- but then trying to drag around the short staccato notes to see where they sounded the nicest was quite slow.

R: Mm-hmm.

P7: So by putting a delay on the delay in Reaper, you can change how far the beat offset is. So it is really it really fast way to audition where it would be like sort of tinkling along.

R: OK. OK, so you just moved to fader, I guess instead of, Yep.

P7: Yeah. Yeah, and then added reverb cause didn't like how dry it was and then that was kind of the the whole process other than adding markers. So I knew where the chords work. I kept thinking to myself. Oh, is this the CAD9 or the C like minus seven or?

R: Umm. And so is that this? UM first screenshot is where you were.

P7: Yeah. Well, I mean, I guess that should be second I noodled them and then I found I figured out the chords and wrote them down. So maybe maybe that should be.

R: Thats OK. Yeah. OK. And I think you described why you didn't paper as well already. So the second question is talk me through the reflections that you've written in your Miro.

P7: Yep, So that's the second column, right?

R: Uh, yes, because I think we mostly talk through these. I might probe some of them in a second, but yeah.

P7: OK. And yeah, so I didn't experiment with the AI yet because I designed it to be an automated higher performing version of the humanize function, which is just in Logic Pro it be described as like a transform preset in in Logic Pro.

R: OK.

P7: Actually just uses uniform distributions of randomness between given values for velocity and micro timing adjustments. But like, my model needs quantized start end times and pitches of notes, and then it predicts velocity microtime and adjustments, tempo adjustments and pedal use. So I was kind of like- it was a bit too early in the process to start using it because I wanted to have like a a nice idea.

R: And so when you are coming up, yeah. When you are coming up with material, right, do you think that, uh, you had the knowingness about your AI system that it needs to be quantized and these things- that you've- were writing material that you knew the AI could take easily?

P7: Yeah, I think so. Because I mean coming into it with the idea of doing something low FI hip hop, which I ended up moving away from and I was like, oh, I'll just start with piano. But I also know from building the model that although it is, it has some instrument agnosticism. It performs best on piano because the data sets piano and so I think that definitely coloured the choices. Like maybe I wouldn't have been as neat or spent or like quantize the notes as much, but I kind of knew.

R: Mm-hmm.

P7: If I don't do it now, I'll have to do it later, you know? In order to put it in the algorithm.

R: Yeah. And so does this tie you run into this? Uh comment as well.

P7: So yeah, so when I was messing with the processing because I don't know your compositional experience, but I find I like to kind of rough mix as I'm going and and that often includes processing like delays and you know I do my delay and then if I was humanising by hand I would kind of make micro adjustments but I know that sometimes the model can be a bit off with timing and then I started to consider Oh well if it jumps this note too far is the delay suddenly gonna pull it over to the next bar? Is it gonna cause clashes and harmony like, you know, disharmony. Discordance.

P7: Yeah.

R: Yep, OK.

P7: So that was like an unintended impact. I should have one that says Butterfly Effect. That was a thing.

R: OK. Yeah, that's a good phrase. That's not one I've. Yeah, thought of applying in this way.

P7: Yeah.

R: And you say that you realized it's like riding a bike.

P7: Yeah. So I've not composed professionally for like 4 years because I started the PhD with no programming experience and it's a Computer Science PhD. So it's been a lot of Sound of Music programming and computing, and I've not really had the time to work professionally and I left my band when I had a kid because of COVID so.

R: Yep.

P7: Yeah. Yeah, I did. So I've done a little bit of composition work in the last couple of weeks because I've been given a like a contract by the ANONYMISED doing a joint project. But before that, I probably haven't composed only for game jams for a while, and I was like ohh yeah, is this gonna be hard?

R: Yep.

P7: I don't. I don't really use Reaper. I've picked Reaper for today because it has better MIDI output functioning to put into the AI to put it back in, so it's kind of like ohh is this gonna be really difficult and slow? But it wasn't. It just sort of came back.

R: And so did, and so you said using more theory umm-

P7: Yeah, like, I don't usually think about chords, but was that, umm, sort of? To get back into it or to get something to ounce off of. I uh what was the driving force behind that?

P7: Yeah, I think the impetus for sort of writing the chords down was it gave me a quick way to remember, like, oh, I know there's a major as like a C E and G and I know that the 7th is gonna be the B. And like I know from looking if I just looked down at the piece of paper rather than having to open up segments of the DAW, it's faster and it also- I did it thinking- if I write these down now when I'm writing other parts and harmonies and like basslines, I know exactly which note Sette age that yes.

R: OK. Cool. So talk to me. Uh, elaborate on this post it note for me please.

P7: OK. Yeah. So because the use of the AI isn't actually practical yet, it's just sort of theoretical. I thought it was interesting to consider. Like I didn't realize it would at this stage already be colouring decisions. I knew that if I used the generative AI like a MIDI generative system.

R: Yep.

P7: That that would color things because I'd be thinking about what training data it needs, like or not, training data, what input do I need? Like if I'm gonna use this Markov model, how much data do I realistically need to give it before it's going to generate a useful state transition matrix or something? Whereas with CPEP, my algorithm you just give it your piece and it kind of just does its thing because it's already trained.

P7: So I thought this won't color. Any decisions at this point it'll have a sound good or bad. And then I'll sort of adapt based on that, but it did it like I'm already thinking, more about like, oh if I'm using violins but really – because they're not plucked instrument is not going to perform as well - I'm not going to be able to simulate the Boeing using CF, and then I'm thinking about I'm gonna simulate the bowing to get it to sound nice? Yeah, there's more sort of interaction there than I expected.

R: And then. Yeh, so I think we kind of talked for this right- but then maybe we didn't say if bugs will break the flow of composing.

P7: Yeah. So with my model, the on time. Sorry, I say model. It's got. There are five models, so there's one for velocity predictions, one for on time, off time, tempo and articulation, and the ontime model in particular has a very weird tendency that the longer a piece gets, it tends to predict more wildly. There's a bit of a bug with it really.

R: OK. Yeah.

P7: I'm in the middle of fixing it so I can commercialize it, but and.

R: But I guess it'd be interesting to see what will happen with it. And so I guess, uh, how do you think you would then done manage that, right? If that happens, if it does something weird, what?

R: Yeah.

P7: And I'm thinking if it starts to really mess up the timing, like if the I don't know how reef is gonna handle tempo predictions and just because I'm not super familiar with Reaper yet. But if it starts not liking the combination of tempo and timing and thinking of going into the code and cutting out two of the models and just having the three base models that are sort of simulating the humanize function in logic and then doing it that way. I mean if it if it's only doing a couple of notes, I can just drag them until they sound right and it'll still be faster than dragging them all by hand.

R: Yep, and I wonder. So you would you do see it as like a bug and it needs to be fixed as opposed to like a thing that happens.

P7: Yeah, cause at the minute in I've done two listening studies and in the second one we did a score queue informed model called Virtuoso Net was actually rated on par with professional human players, whereas ours was came third. But we will use it in a much smaller set of input features and it – when I show people it feels a bit like an amateur professional playing rather than a professional because the timing it feels a bit wonky in places and I think we only got 5% of the data to actually fit because there's some synch errors with the data set. So it's a matter of. Kind of fixing that is that it feels like a bug rather than a performance style, if that makes sense.

R: Yes. Yeah. OK, so did anything super surprising happen or did anything stand out as very important?

P7: Uh, no, I think he just went a lot smoother than expected. I I don't know if this will- if the current demo because it's like a minute long- will be representative of the final art artifact, because I would have liked to make it low fi. Sort of hip hop, but I think I've gone a little bit too classical with the chords. I mean, a little jazzy, a little classical. You know it. I don't know what the key is. I should probably try and figure out the key and yeah, I'll, I'll.

R: I don't know.

P7: I'll probably do that next.

R: OK. And so if you have to summarize this session in one word. Would you go for?

P7: Flow probably.

Interview: Session 2

P7: Cool. So this was a more reflexive kind of session. Earlier I was just trying to like generate nice ideas and see where they go. In this one, I decided to start the session of the hour or if you wanna call it, I took out the strings and the delayed piano and tried adding some like different kind of beat elements. So doing a four on the floor kick, trying 8 16ths to 32nd notes on the higher and changing where the snare sort of falls to see how it affects

you know, this kinda slow jazzy sort of chord progression. So so exploring that and didn't like it got rid of it, brought the other stuff back in, added a double bass- and and then I spent some time trying to. I accidentally looped 1 bar uh at the start of a chords- at the start of like one of these chords. It takes 4 bars, so it went da da da da and I was like, this sounds nice. Let's make some space at the start. Experiment with that. And so I didn't really go anywhere. But you know, it was a work, and because I also have thought, oh, this will be staccato notes. So we can kind of I know the model does well with staccato notes. So it'll be nice just to see how well it plays them, but then I decided I didn't like the intro, so I got rid of it and and then. Did like a- decided at the end to just do a cadence of three chords.

R: Yep to try to give-

P7: Yeah, just so give it a finality to it, because it's nearly two minutes long and it's just like the same chord progression free times, but it's really slow. But it's got different stuff going on and I wanted to try and run it through the AI before we finish the session. So I did that and then convert it. Uh, I've got a preprocessing script that converts MIDI to a JSON and the the JSON is what we use as input for the neural net.

R: OK. Yep.

P7: Uh, but it also does things like it does key estimation. It tells you what, like the median pitch is, and all stuff like that, and there's some screenshots of that on the Miro.

R: OK.

P7: So like, that's as far as it got really.

P7: Yeah. OK, no that's good, right? Umm, OK, so let's talk through the I was like the things I could ask, but I think if we talk through the post-it notes still come up as we go. So yes, please tell me through the different your reflections on the sticky notes.

R: Cool.

P7: Is that the first column or the second column?

R: Uh, yes, we can do it together as we sort of move through.

P7: OK. Yeah.

R: So you're thinking about what you learned recently?

P7: Yeah. So when I've been working on that low Fi hip hop I you know, I'm not a percussion player. I play mostly like bass and then guitar, and they're bit of piano and I was sort of. I've been experimenting with different types of beats and like changing kind of where the drums are falling into change. You know, it's kind of like looking for a different groove pocket and thinking about how that could interact with these slower chords.

R: OK.

P7: And but yeah I didn't like it and.

R: Was that up? So I guess you're looking back on your previous experiences there and bringing them we doing similar things that you would do before in this sort of area or?

P7: Uh Similar styles or?

R: Yeah. Or I guess technique maybe?

P7: And usually I don't you. I don't do a lot of percussion when I do percussion, it's usually timpani and like sort of action drums and but similar sort of style. I either I'll start with drums and outline the sort of rhythm that I want, and then I'll compose to the rhythm. Or I'll do everything and then the drums.

R: OK. And so, OK, I'm going to go over. Didn't use the AI system yet, but did test ideas and so when you were testing ideas, even though it's not about the AI you were considering how it would affect the AI system, right?

P7: Yes. So when I was doing the staccato stuff. Which is abit further down?

R: Yep.

P7: I was thinking about how I was sort of phrasing them, thinking about how that's gonna interact with the. I was like, how will the AI perform this and what should I expect of it?

R: Yeah.

P7: UM, the same for the drums. I know it doesn't work particularly well with drums, so sort of like what I didn't find a beat. Sorry that I liked. I was kind of like there's no point in exploring this further because it's not gonna go well with the AI anyway.

R: OK, right. So I guess.

R: I guess the AI is almost acting as like a I don't know. I don't. I don't put words in there. I'm.

P7: I'd word it as that probably and yeah, the AI is kind of, yeah.

R: Yeah, sort of a producer. OK.

P7: Like could you do you? Have you have to sort of think about how it's gonna work? And I know a hacky way to get around it doing drums but. Umm. You know, to be fair. If I'd use the AI on all the piano and then the strings and I didn't want to use on the drums, I would just hand done the drums.

R: Yep.

P7: But yeah.

R: Yes, So, How do you feel about that? Right. Yeah. The AI Dictating. You know your composition choices.

P7: Umm yes, it's difficult because that designed the AI to not, you know, my entire ethos for designing AI and coming into the PhD as always been it's it's serves it doesn't supersede. And you know, and I've had a lot of professional composers be very excited about the idea of having this tool in their sort of toolkit because it's just a, you know, if you turn off tempo and you turn off articulation predictions, it's basically just a more advanced humanize function. So they'll spend less time sort of faffing moving notes, but I didn't expect it to dictate like. The process as much as it is like, maybe it's just because I'm out of practice like you know, and I think composers, more professional composers, you've got like much wider tool kits and don't have the computer constantly telling them to force quit.

R: Yeah.

P7: Probably will do better, but for me I was like, you know, this is there's only four hours of composing really for the study. And I was like, I've probably designated 20 minutes to drums. It doesn't feel right. The vibes not correct. It's not worth exploring further, but you know.

R: OK, so that might be more that's possibly because of like the time limit of it doesn't task correct.

P7: Yeah. Like because I there is a way to sort of make the drums. Be performed better? That's very easy. It just means moving the drums into the piano range and then moving them back down. But you know, I was like, it doesn't feel right. So it's not worth the time investment.

R: Yeah. OK, cool. So anything I think you did mention something that was surprising that happened or anything that stood out was super important.

P7: OK. Uh, OK, I'll remember what I said and.

R: I think it was to do with looping a looping some notes.

R: Oh yeah. Yeah, happy accidents. Which, you know, I accidentally looped the first bar of the first chord and that I hit I hit space to audition it or what I was doing and it just kept going. Ba duh duh duh bad duh duh udh. And I was like, oh, this is quite nice actually. It's got like you still outline in the sort of harmonic- what would be the correct sort of theory expression it you know, you still still outlining the chord because it's the same notes, but it's much faster than staccato um. But it just, although it was like a cool exploration of ohh, what's this like? It didn't fit the rest of what's going on because the entire 2 minutes is just very slow. Sort of chord progressions and but yeah.

R: Yep. OK, cool. Yeah, if you had to summarize it in one word.

P7: Uh reflexive this time?

Interview: Session 3

R: Seems like it was a full session of productive stuff.

P7: Yeah, it was good fun. And I did have a little section in the middle where I edited some code so that in one of the files I had it set up so that you have to like. Sorry, you have to change the variable name to the file name and I was like why am I doing this four times when I can just make a new variable and copy it? So, over than that it was like ohh render the piano. Compare it contrast have, I think, and then edit it. So it's a bit more quantized. And yeah, did that for.

R: OK. I see so. Is that kind of what's going on? This is the JSON output and this is it. Then the output from the model right?

P7: Yeah, that was it, performed by the AI.

R: Okay And so you would compare that with your original annotation.?

P7: Yeah, so in the next picture, the top one is the quantized piano, and the second one is the performed piano. And it sounded really nice, but it had elongated the chords a little bit too much and sort of lost its. It didn't have a consistent beat, so when they tried to like take the strings to it, it didn't really work. So what I decided to do was keep the performance like the playing of it, but make them fit to the bars the way they originally did. Even if there is a little bit of going over and then kinda do it that way, so sort of frankenstein it it, it sounds nice though.

R: And so you did that manually by moving the shifting the points.

P7: Yeah.

R: Yeah, OK. Yeah. Cool then this.

P7: Ohh yeah, tried to do the polyphonic rendering of the three part strings and I forgot that the model isn't polyphonic. I mean, the renderings can be, but the way the way they have set up the preprocessor, is it just as the first line and like the the first layer.

R: Yeah. Yes, OK. Yeah.

P7: So only the violins got done.

R: Uh-huh.

P7: So I'd like I tried synchronizing just the violins and then the staccato piano, and you can see they're sort of out of sync in the pictures.

R: Umm Yep.

P7: So I had to do the same with that and after after I'd cut up the piano chords, though, moved them. They actually fit straight to the staccato delayed piano, and so that was good. And then after that, I went back and did the double bass and the cello separately and then sort of cut those up -the the one little bit that's highlighted hasn't been actually rendered.

R: OK.

P7: I didn't realize it was separate, but it still sounds nice and for the strings it only it's rendering seems to be - because it's not designed to be on a bowed and instrument- the first half of the notes are Max and the next half are half way. So it's learned that like it still gets quieter.

R: Yes, so a bit like a yes. Yeah.

P7: Yeah, and but I was impressed, so.

R: So yeah. Yeah so whats the overall impression so far.

P7: And I was quite happy with the performance there was like for the next column. Umm. Ohh, no wait. It's it's one of the columns. There was this kind. Yeah, it's the second one actually. Sorry. So there are lots of comparisons kind of happening. So I was comparing struck instrumentation being rendered versus bowed and then you were kind of, ohh how does the the AI performance sound compared to the quantized original performance?

R: Yep.

P7: But then in the back of your head, unconsciously, or at least for me, I was listening to it going oh, wow. Actually this is how I would expect, not a professional, but maybe like a someone better than amateur to play the piano. If they were playing this and I was quite moved by that, it was like ohh, it's actually quite listenable, yeah.

R: Doing something pretty cool, yeah.

P7: And and it became fun because it's the I think if the first track had sounded bad or had done a bad job, it would have been frustrating trying to piece it together. But because it sounded nice, we just needed a little bit of editing.

R: Yeah.

P7: It was quite an enjoyable iterative process.

R: OK. Yeah, cool. Yes, it was fun and so...

P7: Oh yeah, like there's some hurdles to workflow. Like I think it's less productive having to go back and do multiple files because I had to keep closing Reaper to run PyCharm because they're quite RAM intensive.

R: Yeah. Yes.

P7: I I I didn't expect to feel moved by the piano performance because I've rendered lots of music before and sometimes I'm impressed and sometimes I'm like, that's OK. But I don't know if it's because you inherently buy into music you're writing yourself, and I know I can't play the piano like that.

R: OK.

P7: And it did it and I was like, oh, this is like realizing what I want and.

R: Umm, yes, yeah, yeah. And so, yeah, my question would be right on this particular one here and it's in the reflection-on-self, right? So if you can elaborate on you know how it sort of becomes personally meaningful to you, but it's able to do his things.

P7: Yeah. And after I say this, you want me to type it into a thing for you as well.

R: No, that's OK, that's good.

P7: OK. But yeah, I think. In the same way that like in the Louie et al. paper the It's a 2020 ISMIR paper. I don't know if you've read it.

R: Yeah, I think so, yeah.

P7: Yeah, Co create. It's like novice steering of Co creation tools.

R: Yeah, it has some sliders to make things sound happy or sad or something like this, isn't it?

P7: Yeah. And and it kind of it offered them like a non-musical interface to sort of get to express themselves.

R: Yep.

P7: And then I think this became more meaningful though because. Like when you look at like text to music models, anyone can do that. But with this you kind of you make your own music from my paper from this year. There's this whole section of it. That's about like when

you write music. It's your vocation, and you buy into your vocation. But then, like, it became more meaningful because it was like. Making it more real like, you know, compared to listening to actual MIDI like- I'm only using free software instruments.

R: Yeah.

P7: I'm not using any nice expensive ones. It's still sounded nice and and as I was using it, I was like, oh, I might go back to that LOFI demo, pull the piano out and have it performed by the AI because it sounds nice.

R: Yes. Yeah.

P7: And like it became this sort of cyclical thing of like, oh, this is fun. And like, yeah.

R: Yeah. So I think theres a few things. There's this sort of cyclical thing where it becomes fun because it's making umm I I think there's also like the music is very much yourself. Right? I think is what you're saying and the fact it's augmented it and made it better and more expressive. Like uh, you've had in your head. Maybe or I don't know.

P7: Yeah, like it. It played it the way I can't play it, which was always the goal of the tool was like I as a dyspraxic person. I can't really play piano very well. Pardon my my language, a shit hot bass player, but there is a difference in dexterity between base and piano, isn't there? And like hearing, hearing it be played by an AI, it was like it was kind of like when you watch your music. Be performed by someone but with it, but more personal. You know, I mean.

R: Yeah. Yeah. A more personal, how so.

P7: I think when you give like sheet music to a person, they interpret it certain way and that's fine. And you can go back and give them directions, but because this is MIDI and we're still in the DAW. If I don't like something, I can just change it. I can be like, oh, this is really good. But that one note should be louder because in this case it's not a fugue, but if it was a fugue I could say ohh this is the counter subject of the left hand and it should be louder than the contemporaneous notes. Do you know what I mean? Like.

R: Yep. OK, cool. Anything surprising? Or if it's stood out as really important in this part of the session.

P7: I think. It makes you think about mindset like I think I went in knowing I was gonna have to do a bit of playing around with it. And I think if someone didn't realize that and they thought it was just gonna sound great from the get go, it would be, it might be frustrating.

R: Yep.

P7: I think expectations play a large part in. How we emotionally connect to the process, I guess of Co creation.

R: Yeah. OK, cool. So in one word summary, what do you?

P7: Iterative will go for that one.

[Interview: Session 4 & Post-Task](#)

R: OK, so please talk me through your composition process and what we did in the session.

P7: Cool. So in this session I was kind of less in composer mode, more edit mode. I'm just going to set it up on the other screen a bit bigger so it's easier to see and so like I knew I wanted to add a perfect cadence to the end of it. And like a final chord, and I didn't like how long some of the final chords were being played for. So anyway I wanted to fix that and then after like the initial hype of, oooh, this is exciting. Using the AI was over. I noticed where it made notes too short and they like, sometimes it, the way they were sounded was covered up by the DAW's performance. You know, like if it had a glitch because I was pushing them around on my computer a bit and, so I fixed those and realized that if I muted the strings, the delay sometimes made them overlap with the next 8 bars.

R: OK.

P7: So when I back and fixed those. And then manually humanized the final chord. Because I wrote it in. Yeah, but then I tried it with the AI as well and and they were basically very similar.

R: OK.

P7: So I just left the one that I'd written in and and then dropped into audacity, and I've got a macro that I use for game audio for like just putting a really tiny loop on it. So just did that, and then that was done.

R: OK, cool. Umm, there's not actually much. I wanna follow up on really, I think it sounds good. Yeah, I guess let's talk about. Maybe you could elaborate on this post-it here.

P7: Yeah. And yeah, I think like I'm still happy with how the AI is performed it the first few times I heard there, I was like, oh, this is kind of a it's kind of emotionally connecting to me. So I'm quite happy with it, but as a as I I'm a bit nitpicky, so as I've started to notice smaller mistakes it's made that maybe have been covered up by the mix.

R: Mm-hmm.

P7: It sort of made me less excited, but like I'm still positive about the impact it's had on this sort of workflow, but.

R: Yep.

P7: You know, there are some of them are mistakes. You wouldn't expect from a human if they were playing, so you're like ohh - you know, it's not as good. But you know, it's still a nice piece and it's still nice the way it's played it so.

R: OK, cool. Umm. Yeah, I mean, I'm quite happy with this to be honest. I probably won't ask any questions. Anything super important or surprising to happened, really or?

P7: And no, not really. Just the amount that my computer couldn't handle it. It was surprising.

R: Yeah. So I think I think it's important thing to I talked about but, OK yeah, it looks awesome.

To post task:

R: So OK, I want you to consider the whole thing of having to stop and do the screenshots and then do the post it notes. Um so, do you feel like this process helps improve your creative practice? Yes. No. What ways?

P7: I don't think it helps make it better. I think it made it a bit more, not vascular. What's the.. abit more cognitive like, you know you sometimes, when you compose you drop back into muscle memory and like.

R: Yep.

P7: Into easy habits, but because I had to like document it, I kept thinking ohh what's a better way to do this?

R: Yes, OK.

P7: When is the best time to take the picture and stuff like that?

R: Yeah. Yep. OK.

P7: Yes, I don't know if it's better, but it's different.

R: So any suggestions for how it could be improved?

P7: And the screenshot reflection process?

R: Yeah.

P7: No, I think it was good the way it is. I liked the initial idea of using Python to do it, but I think I think it's good.

R: Yeah, it ended up being. It would have been a whole extra time to set up, and already it's a long day. Yeah, yeah. That's the reason that went.

P7: I mean, that's fair. I was gonna say I think it's actually better to do it yourself because. They AI or the the Python at least might have taken pictures at times when it's not important like every decision is important.

R: Yep.

P7: Like when you play chess, but the moments that you as the artist choose to take a photo of is representative of like the way you feeling about the process, like in the final stage, it didn't feel as creative.

R: Yep. Did you find anything? Any, I've said unexpected findings by doing the screenshots, but I also think maybe did you do things differently because of the whole screen shot thing?

P7: I think I was probably more thorough because of the screenshots like for some of the smaller sections are straightens. I probably could have just humanized them myself, but because we were documenting it, I was like, no, no, I like it's a we should do it this way like it should all be done separately and then put in and then dragged around afterwards.

R: OK. Umm, there is just any other feedback of comments or any anything you think, yeah.

P7: I just thought it was a really fun study, to be honest. And I enjoyed doing that.

Miro: Session 1

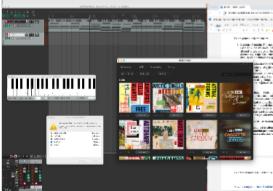
Reflection 1:

Reflection on Current Process
"Did you re-examine what you'd learnt and find alternative ways of doing things?"



C Major 7 C major 7 C major 7 Am 7 Bm
G major 7 G major 7 F#m 7

Yes, I normally don't compose using music theory, but I am working in a less comfortable genre so I thought more about chord voicings.



Without access to a MIDI keyboard, I used the virtual keyboard in Reaper and it seemed to only allow 5 voices, so I had to adapt how I usually play in pieces.

I thought about the genre I was working to and realised that I didn't have the sounds I wanted and downloaded some libraries



As a non music theory buff, I noodled string parts over the background chords to find the right sound.

Noodled violin parts were moved down 2 octaves to be mirrored on the cello, piano chords did the same for right hand (up 2-8ve).



Decided to use delay to offset midi programming (i.e. audition movement from beat to beat faster)

Added reverb where necessary to improve the mix/sound/vibe

Reflection through Experimentation
"Did you iteratively generate and test ideas, or make comparisons in the system?"

I didn't generate any content (or performances) yet, as the tool is designed to automate the humanizing process, and I was in a composing flow.

While I didn't generate anything yet, I know the model performs best on Piano. This changed the way I compose (as I may not have used piano otherwise to begin with).

Reflection on Self
"Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"

I think, because I had to adapt to using more theory to guide the process, that I realised it's a bit like riding a bike.

Other
Any other reflections on your process?

It's interesting how the inclusion of the AI (even theoretically as it hasn't happened yet, affects compositional choices this early on).

I'm interested to see how the model performs the piano parts I've written, but I wonder if bugs will break the flow of composing going forward.

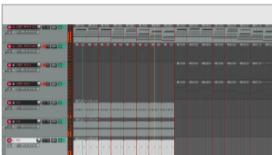
Butterfly effect

Miro: Session 2

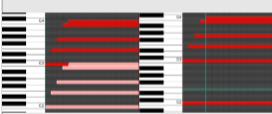
Reflection 2:

Reflection on Current Process

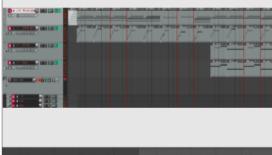
"Did you re-examine what you'd learnt and find alternative ways of doing things?"



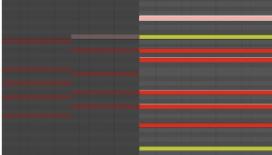
I thought about what I learnt recently about using drums with piano and tried changing the orchestral elements to drums to see how the vibe changed.



Based on recent experience I toyed with extending the chords voicing, but decided not to overfill the harmonies.



Added an intro
with more
staccato rhythms
(as curious to see
how these run
through the AI)



Added a
slower coda,
using longer
chords.

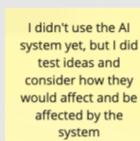


Exported just
the main piano
midi for
expressive
rendering

Conducted pre-processing to get the midi file into the right format for the neural network

Reflection through Experimentation

Reflection through Experimentation
"Did you iteratively generate and test ideas, or make comparisons in the system?"



I iterated on many different creative ideas in this session (where the process was more of a reflexive, building upon session 1).



Reflection on Self

"Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"

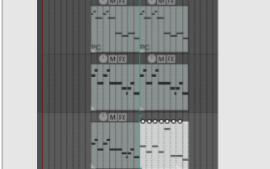
Other

Other

AI dictates
part of the
producing
role

Miro: Session 3

Reflection 3:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
 <p>I started the session by rendering the json of the piano midi file that I prepared at the end of the previous session.</p> <p>Then I needed to review the output a few times to judge the humanness, and I was happy with the quality.</p> <p>Then to start thinking about how an AI performed set of chords differed to the quantized midi, I compared them to think about how to get other layers synchronised.</p> <p>Then I attempted to render my three part orchestral part, and the staccato piano riff.</p> <p>I found that the delayed piano riff and the violins weren't in sync with the piano chords as the tempos differed, so I decided to align the first 8 bars and then get them to line up.</p> <p>Then I realised that the renderings only did the first track of strings (as it's a monophonic model) so I went back and rendered the other string parts.</p> <p>Finally, I synced up all the parts using a lot of cutting and sticking together to get a nice sounding AI performance of the piece.</p>     	 <p>Yes I tried polyphonic renderings compared to monophonic, and I also tried running non-struck instruments (i.e., bowed strings) through the model.</p> <p>I took the expressively rendered output to the original and compared them to hear and see the differences.</p> <p>Mentally, I compared my models output to human performances I have heard in the past to estimate its success (this was semi-unconscious).</p> <p>I felt moved by the way the AI played the piece, I was quite happy with it, even if I had to remove some of the tempo to make it easier to piece together, the unedited ai performance was still nice!</p>	<p>I learned that I really enjoyed using the AI as a tool and that it was fun.</p> <p>I learned that there are some small hurdles to make the tool usable in a better fashion (i.e. make polyphonic files renderable).</p>	

miro

Miro: Session 4

Reflection 4:

Reflection on Current Process "Did you re-examine what you'd learnt and find alternative ways of doing things?"	Reflection through Experimentation "Did you iteratively generate and test ideas, or make comparisons in the system?"	Reflection on Self "Did you learn anything about yourself from the experience or reflect on something personally meaningful to you?"	Other Any other reflections on your process?
  	<p>This part of the experiment was mostly cleaning up sections, adding a nicer ending and tidying up mistakes from the AI performance not noticed earlier.</p> <p>Examples included moving some of the staccato notes so they don't overlap</p> <p>I manually humanised a new final chord to end on a perfect cadence, but then tried it through the AI as well, but they were identical</p> <p>Changed some note lengths to make it sound nicer</p> <p>dropped the track into audacity to add a fade to start and end using custom macros</p>	<p>I generated some new performances of a single extra chord and compared human and ai outputs</p> <p>I tried adding some ambience to the files (sub-bass etc) but it wasn't needed</p> <p>Used a closer look to analyse the AI's performance from earlier and spotted mistakes that have been fixed.</p> <p>compared my thoughts to the previous session and felt less excited but still positive about AI impact</p>	<p>That if I get excited by the AI output I don't notice small mistakes (and the DAW's performance can cover for them)</p>
			miro

First-Person Account (Unedited First-Draft)

My algorithm is designed to be a better performing alternative to the ‘Humanise’ function found in Logic Pro. The five transformers take only the pitch and quantised start and end time of notes as input and use these to predict expressive note-wise velocity values and micro-timing adjustments, as well as beat-wise tempo adjustments and sustain pedal use. In essence, this algorithm generates human-like performances of input MIDI. Given the nature of the AI tool, the first composing session did not involve the AI, as I needed to create music which could be expressively rendered later in the process.

I began the composing process by deciding to work on a lo-fi hip hop style track, starting with piano as this is a common instrument in this genre. This was the first aspect of the process in which the ***Butterfly Effect*** of AI tool design was felt, as this decision was also influenced by my knowledge that the AI is trained on a piano dataset and as such would perform better on this type of data. I call this a ***Butterfly Effect***, as while I started my PhD with the goals of: building an expressive rendering algorithm to serve and not supersede composers creatively; creating a tool that does not affect workflow, decisions that I made during the algorithms design and training have definitely had an impact on creative workflow, even if only in unexpected ways. For example, knowing that the AI would perform piano the best coloured my choices. Similarly, knowing that the AI needs quantised values as input I was neater in how I wrote the music in the first couple of sessions before the AI was involved, than I would have been if the AI had not been included in the process.

Another aspect of composing affected by understanding the tools design was reflected in how I handled using delays. I knew from experience that the model's timing could be buggy, so when experimenting with delay values in Reaper, I chose to be safer to limit the potential for overlap across bars and different chords, where the delay and micro-timing adjustment may lead to discordance. Given that the use of the tool was only theoretical in session one, I find this interesting as I did not expect it to colour my choices in such a noticeable way, so early in the composition process. I knew that the use of a symbolic music generation system would colour decisions, as I would have to consider how much input to use, where to get it, what style and representation the data would need to be. These elements would have a more direct influence, especially when colouring the composition process.

In session two I began to experience the AI as a pseudo-co-producer, in the sense that the inclusion of it in the project influenced decisions that you make creatively as a mix engineer or composer. Session two was mostly centred on exploring other compositional avenues, as the initial piece had strayed from the original lo-fi hip hop style to end up a slow jazz piece. In this session I explored further with adding staccato piano notes in the right hand, as well as attempting to add drums to see if it would end up still feeling like a lo-fi hip hop piece, however after a short amount of time I disregarded these ideas. I did this because the vibe/feeling of the music was not correct, but also because I knew that my algorithm does not work as well on drums, so given that the musical feeling was not right, and the experiment has limited time for composing, I decided to abandon these avenues. This is another example of the ***Butterfly Effect*** of AI-human co-creation.

Session three is where the AI was introduced to the mix in a practical sense. In this session, I ran the piano through the algorithm to begin with and then I compared the expressive output to the non-expressive input and was impressed by the results. The beat had become

unsteady, requiring some human manipulation to get it back into 4/4, but this was a rewarding experience, and the quality of the playing was good. Another comparison that I made which was unconscious was that of a comparison between the AI performance and what I would expect to hear if a human were playing my music. While I know how it stacks up against professional pianists from my own listening studies, I found my brain making unconscious comparisons throughout the process. Luckily, while the output is not of a professional performance quality, it was good enough that I felt moved by it (surprisingly). I really did not expect to be moved by the piece, and I do not know why I found this quite moving. It could be because: you inherently buy into the music you are writing, as your vocation is attached to your ego (Worrall & Collins, 2023); if creating the music and having it realised is more personal than when novices use AI tools to steer music creation (Louie et al, 2020) or if it's more personal than when people use text to music models, because some human effort and creativity has already been used. I cannot play the piano well myself, but when the AI was playing it to an acceptable level, I found myself thinking: "oh that is it, it's realising what I want to hear from my music," and I was pleased with it. Additionally, while you can have a human perform your music, the ability to see the notes in the DAW during the auditioning of the performance offers a much more granular control over playback, making you a conductor/composer/producer. Session three also saw the algorithm used on the staccato piano layer and the 3 piece string ensemble that I had composed, and I encountered some issues to workflow such as the need for files to be monophonic for rendering, instead of polyphonic (which means only the violins in my ensemble were rendered in the first run). Overall in session 3, I found the process enjoyable. This was likely coloured by the fact that the output sounded good from the start, and because my knowledge of the tool meant that I already had a mindset of knowing that I would need to edit the AI's output, which meant I did not get over excited. In general, though session three was an enjoyable, iterative process.

Session four saw the process become less joyous, as I had time to more critically reflect on the process and the output, I was still happy with the output, but I began to notice small mistakes that may have been covered up by the mix (such as some notes being too short to trigger samples properly). I think had the experiment ended with session three, I might not have noticed these mistakes. It's worth noting as well that there were a bunch of hurdles or problems that occurred in the first three sessions, that the fourth session being less busy also gave me the opportunity to reflect on. These issues include: the computer crashing because of an overload; needing to restart the DAW to install new libraries for better sounds, and having to run PyCharm and Reaper simultaneously. These were RAM intensive, and hurdles to workflow, as well as compositional flow.