Composer Profile

Angelo Fraietta

How did you first get into computer Music?

That fact that I got into music at all, let alone computer music, is a total amazement to me and something that I would never have dreamed would happen.

I came from a Calabrese background where hard work and providing for ones family were all that were really important. From the age of five, I sold flowers at "the farm," which was a market garden in Dee Why. I worked there until my father became ill. Music was not a part of our lives at all; on the contrary, we were discouraged from playing music. I remember when I was about ten, trying to make a flute out of the bamboo that we had growing nearby; however, I had no idea of what to do to make one. My first introduction to any music was in fifth grade where I was put in Mr. Lloyde's class, where he played guitar and we sang. I remember seeing the children in Miss Bolt's class playing the recorder, and I was very envious! Providence had it that I was placed in her class in sixth grade, and so I sang in the choir and learned the recorder. In my first year of high school I excelled in music. My teachers tried to encourage my parents into buying me an instrument; however, only Gypsies and bludgers take that path! Music had been taken from my life, so I rebelled.

I joined the RAAF at fifteen as an apprentice Radio Technician and went to Melbourne. I remember buying myself an electric guitar and playing it while everyone else was studying; there was no link for me at this point between music and electronics. When I had finished at Radio School, I was posted to Newcastle, where my only interest was playing the guitar. In 1987, I started studying classical guitar under Terry Latham, which was a turning point in my musical outlook. I was posted to Penrith and started studying guitar under Gregory Pickler from the Sydney Conservatorium. I applied to study Music at UWS in Penrith because I was impressed with Michael Atherton. I remember getting a promotion to sergeant, finding out my wife was pregnant with our second child, and then immediately putting in for a discharge to study music full time when I received notification of my acceptance. Only my wife and a few close friends were supportive of this decision—many people thought I was a fool (some people still do!).

During my study at UWS, I was introduced to computer music through Jim Franklin and Julian Knowles. I was a full on guitarist, gaining my A.Mus.A. at the end of first year; however, when we started Max programming in second year, my mind was completely blown out and computer music became an obsession. In third year, I was involved in two collaborative projects: the Laser Harp by Alex Cockburn, and the Virtual Drum Kit by Guy Robinson. The Laser Harp is an instrument that is performed by cutting laser beams with the body, while the Virtual Drum Kit entails a performer playing an invisible drum kit. I remember wishing that Max was available for PC, so I wanted to develop Algorithmic Composer for my Honours project. In that year, I moved back to my house in Newcastle and learned C++ programming from books. During that year, I also did electronic assembly work for Neil Kilgour and Associates, where I really learned a lot about designing hardware.

Although I graduated that year with First Class Honours and was awarded the Sydney Mechanics School of Arts Award in Theoretical Studies for the project, I felt that I had personally failed. I was so totally obsessed with computer music; I failed as a husband, father, and son-in-law. I promised that that would be the end of computer music for me—or so I thought.

I was offered a job at Hunter Watertech (HWT) as a programmer for real-time embedded systems. During the interview, I pushed the point that engineers are artists: they bring into existence that which did not previously exist. I also pointed out that "real-time" in music was more critical than their systems. I remember the others talking about their electrical engineering degree while I bragged that I got in with a music degree. It is funny to think about, because Greg Schiemer has his Ph.D. in electronics but is a full on composer. I look at his MIDI Tool Box (MTB) and am completely blown away by what it actually

does. I am looking forward to finishing my Ph.D. so I can have time to play with one.

While at HWT, I developed a simulator of the RTOS that we would be using on the embedded hardware. The simulator, which ran on windows, was based it on multimedia timers—a feat I learned while making Algorithmic Composer—and was used before we had hardware. This is one idea that I encompassed for the Smart Controller. There was a program there called ISaGraf, which is a programmable logic control package that can be used to program hardware devices using function blocks and virtual wires—just like Max. I used to program the hardware to generate polyrhythmic patterns on relays in order to test the performance. The software was not suitable for musical usage due to the time delays. This became the seed for the Smart Controller. I applied for a Scholarship at UWS to develop the concept of the Smart Controller. The university rang me in December 1999 and asked if I wanted to accept the scholarship. I told them that I could not as I had too much responsibility, and was not sure of what I wanted to do, and they should give the scholarship to someone else. The university rang me again in March and told me that my name had come up on another scholarship; I didn't have to decide until the following Monday. I was terrified to tell my wife about it. That weekend, I went to the Katoomba Mens' Convention and heard Ravi Zachariah preach, where he mentioned some children being unable to relate to other people because they are so involved with machines. He stated that it would be terrible if machines totally replaced people as artists, making people redundant. I spoke to him about the scholarship I was offered and he said that God needs his people there too. When I went to church the next night, the preacher spoke about wasting the gifts that God has given you. The next morning, the day the decision was required; my wife told me that she knew it was God's purpose for me to go back to university.

So that is how I got here. I do want to stress; however, that I treat it like a normal job so I have time with my family (I have four children now).

What Influences you in what you do?

Often, we hear about composers and artist whose art is based upon their cultural belief; for example, Australian Aboriginal, Eastern philosophy, and even atheistic Darwinism. Islamic music, for example, is not even seen as music as an abstraction; but rather, it is seen as an inseparable part of worship. In our western culture, we often take music completely out of its original context and enjoy it as art. Bach's sacred cantatas are only one example of many. I believe that an attempt to abstract these aspects about myself without placing them in an ethno musicological context would be incomplete and possibly inaccurate.

Whether we like it or not, we all base what we do on what we see as fundamental truth. Even those who say "there is no truth" hold this as a truth within itself. They hold this as an absolute; and so I do the same with what I hold as truth. This is the case in all areas of life, including science (see www.answersingenesis.org for a great web site). All my music, art and instrument building is based upon the fundamental and literal truth of the Bible. I like to focus my music on the entire Bible, a fact blatantly obvious if you listen to any of my music (www.users.bigpond.com/angelo_f). My motivation for being an artist is fixed in the first book of the bible: Genesis. In the book of Genesis, we see the creative power of God, and all mankind created in that creative image. It says "So God created man in his own image, in the image of God he created him; male and female he created them" (Gen 1:27 NIV). This is the fundamental and literal truth I hold onto as an artist—all men and women have been created with the ability to bring into existence that which did not exist previously. This is creation out of nothing. This is very important as I believe this is the creative element of all people and is one of the things that differentiates us from animal— the fact that we can be artists. I believe other creatures, like birds that sing or dance, are like MIDI sequencers or samplers controlled by God's big Max patch, performing the art or music that has already been composed and programmed into them by the Master. We as humans, have the ability to be actual composers in life.

In looking at the justification for producing art, I had to find purpose for my art. When I was young, I was not allowed to play music at home. The only useful purpose was to work and provide for one's family. The concept of "Art for Art's sake" was not something I was brought up with. I used to think that

composers of computer music were people who were too lazy to actually do hard work or too unskilled to play a real instrument.

One might try to find a justification or purpose in music because it might make another person feel better, for example Music Therapy, but this is not "Art for Art's sake." The justification that I find for the concept of "Art for Art's sake" is in the Bible, where we read "And the LORD God made all kinds of trees grow out of the ground—trees that were pleasing to the eye and good for food"(Gen 2:9 NIV). The fact that they were pleasing to the eye validates aesthetic value—not just functional use. Another example was when Mary poured the perfume on Jesus' feet, which was criticised by Judas, but justified by Jesus (John 12:1-8). This demonstrated the validity of doing something beautiful. In asking "why did God create?" the answer is "you created everything, and it is for your pleasure that they exists and were created" (Rev. 4:11 NLT). This gives me justification to create artistic works and build instruments for my own pleasure. I believe that my design and building of the Smart Controller is an Artistic work within itself. The enjoyment of the creative process is justification, even if nobody else used the instrument. One ACMA member proposed that the Smart Controller would be a meaningless and purposeless pursuit in the context of "Creative Art" if it was not used in the context of a musical work or installation. I disagree with this with the very essence of my being. Although a few composers have used my Smart Controllers, and more than a few have used the Dumb Controllers, the validity of the creative process has nothing to do with the popularity of the instrument, commercial success, or even if the device works good enough to be confidently used by any other artists. I enjoy the creative element of making them simply for the pleasure of it. This is a balancing act for me as a Christian where we put Christ and then others before ourselves. In the film Chariots of Fire, Eric Liddell says "I believe God made me for a purpose, but he also made me fast, and when I run I feel God's pleasure" Later he says "To give up running would hold him [God] in contempt." The same is for me as an artist, composer, and instrument builder.

What are you currently doing?

Apart from trying to get my Ph.D. finally written up, the last few months have been particularly busy for me. I have just released an OSC to MIDI converter under the auspices of the Sounding Out initiative, released a new range of Mini-MIDI controllers, worked with Anne Norman on the Bell Garden in Melbourne, and written and presented an introductory electronics course for Rev at QUT. The new MIDI controller range enables people to have a low cost entry level CV to MIDI / MIDI to CV converter with an option to upgrade to wireless. The three days I spent with Anne resulted in me seeing her program the Bell Garden, with the Smart Controller playing back sequences mechanically on the Bells with a precision that I didn't expect. We used OSC to monitor what was happing with the bell stalks. Anne is going to be working with composers at the University of Wollongong in April this year, getting students to compose with the Bell Garden / Smart Controller.

The four day electronics course resulted in the students being able to design and build some sensors and understanding how they work (I'll see how much they really understood when I see their exam results). Although I could see that some brain cells started to smoke up toward, the satisfaction of being able to help these students get a foothold in electronic design is very satisfying.

Instead of doing this work with artists, I could have chosen to just write software for Quikscribe, which is what I do to feed my family. Making art costs me financially; however, my life is not my own—I believe it belongs to Christ. I believe whole-heartedly that I have a spiritual calling in this.

What you would like to see in the future?
I would like to see people having fun with what they are doing, being as creative as they can be. I have been particularly happy with the support that I have received from ACMA and I would like to see that continue, where we support one another as best we can. I have been really impressed with what happens at QUT, where they develop their own technology and foster usage within their own community. Last year, the Fraietta Discretionary Trust provided a prize at QUT that gave the most promising student the opportunity to start working with interactive instruments by wining a free Dumb Controller. This will happen again for the next two years. I would like to see more of this. UWS have started doing a similar thing in that they have bought

some Smart and Dumb Controllers from me, and have worked with some of those students. I am very excited about what might be happening in Wollongong now that they have Greg Schiemer, Warren Burt, and Julian Knowles. I'll check them out when I see them in April with Anne. I am very much for Australian made and Australian played, because that is who we are—Australians. In short, I would like to see one big family where we look out for and encourage one another.

I give my warmest regards to my fellow ACMA members and their families.

Calculating the Optimal Fixed Resistor Value in Voltage Divider Sensor Circuits

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When making a sensor using a variable resistor, it is important to note that you are using a voltage divider network. The goal is to have the sensor generate the maximum possible voltage swing that can be input to you CV to MIDI converter. This in turn means that your CV to MIDI converter will be able to generate the maximum possible number of MIDI messages. For example, if the output swing is 0 to +5V, the converter will generate controller messages whose values are 0 to 127. If the voltage swing is from +2.5VDC to +5VDC, the converter will only generate controller message values from 63 to 127. This has effectively halved your resolution. (Although many CV to MIDI converters, including new ones purchased from me have a 10 bit scaling capability that would reduce the effect of this problem, the point is that you need to maximize the swing without increasing the rail voltages).

Let's say that we are building a sensor based upon a light dependant resistor (LDR) that you get from Jaycar. You measure the LDR with your multi−meter and it exhibits a resistance of approximately 10kΩ when under the maximum light, and a resistance of approximately 200kΩ when there is minimal light. We need to select a value for the fixed resistor R1 in the voltage divider circuit, which we will say has a value of X, as we have not calculated its value yet.