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The Silicon Overture

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“You have an incoming audio message from Clara!” Claude heard in his SmartBuds. He had been collaborating with Jackie on a new song when the alert rang in his ears. He thought about accepting and the message started playing in his ears. “Hey Claude! I hope you didn’t forget about our plans tonight, my dear little brother! I couldn’t even sleep last night. I’m so excited for this concert! It was so hard getting seats this time, you know? They say it’s some sort of celebration for some famous composer from a couple of hundred years ago. His name is something like... Back? Or Beck? Oh whatever, you better not be late this time!”

With a beep, the message cut out and music faded back in. Claude sighed and thought to himself, “Ugh. Another one of these gimmick concerts... I’d rather just stay home. Who needs to go to concerts when SmartBuds can basically do the same thing but better?” Except for when Clara drags him along for the kinds of live performances, Claude hasn’t taken his SmartBuds off ever since he received them as a 24th birthday present from his father. They’ve become a part of him, constantly engaging with activities in his daily life, emotions that he experiences, and thoughts that wander in his mind. In addition to having all the features of a regular smartphone, the SmartBuds allow him to have a unique soundtrack to his own life, music that was specifically and personally created for his story.

Though Claude contemplated about skipping, he did indeed make a promise to his sister. “Hey Jackie, I need to step out for a while,” he said. “Can you continue working on it while I’m away?”

Jackie responded, “Of course! It’ll be done by the time you’ll get back. You’ve given me enough parameters about the song. I hope it’ll be to your liking.”

“Thanks Jackie. I’m sure it will,” Claude said with a smile before leaving the room.

As Claude moved across his room to get ready to go out, accents punctuated notes in time with his steps. He had just gotten in the groove of trying to figure out how to describe the sound he was looking for to Jackie. Everything is about details when it comes to composing with Jackie. His irritated mood had translated to the music and the once-mellow backdrop became increasingly agitated. The key changed to G minor, the rhythmic pattern intensified, the dynamic range expanded. The adlib vocals over the music grew rougher and more anguished. He exited his apartment, locked the door, and proceeded to take the elevator down from the 17th floor. Suddenly, easy listening elevator music filled his ears as all he had to do was simply think the word “elevator.” The piano’s soft, gentle melody helped to soothe his displeasure in having to leave the comforts of his residence.

Claude pondered whether he should take an Uber or the bus, but he decided on taking the longer trip by walking to the concert hall instead. He rarely takes leisurely strolls due to his introverted nature, but he was curious what new compositions his SmartBuds could come up with along this journey. As he observed the people going by, he had a strange thought that never occurred to him. Every person walking with their SmartBuds was interpreting the world in their own way and therefore would have their own musical tale in different instrumentation, different styles, and perhaps even different languages. Everyone was in their own “audio-sphere” without

any awareness for what the person walking right alongside them or the person standing at the other end of the crosswalk could be hearing.

“Stop thinking about that! You’re thinking too much about things that don’t matter,” he told himself as he pushed the thoughts out of his mind. The deep thinking was interfering with the SmartBuds’s ability to read his thoughts and creating a jumbled mess of notes and harmonies. As he started to walk down the street, the beat and rhythm of the song adjusted to his breathing rate and his footsteps. The generated song was of a quick tempo, light and airy in character, reminiscent of the cooling spring breeze that swept through the city. “I should get out more for some inspiration,” he thinks before laughing it off and proceeding to make his way downtown to the venue.



Claude comes from a musical family. His father and mother met each other and started dating when they were college students in the San Francisco Conservatory of Music. His father was an incredible theory and history analyst as well as being fascinated with music technology. His mother was an incredible vocalist as well as having proficiency in the piano and the flute. The two were married shortly after graduating and were widely known as partners in the professional industry as well. The couple had two children; Clara was born on September 13, 2155 and Claude was born on August 22, 2160. From their birth, they were expected to follow their parents’ musical footsteps. But from an early age, Clara demonstrated more of a preference in sciences rather than music which led her to being a biochemist. On the other hand, Claude displayed great musical talent and affinity. His mother began to teach him the piano when he was three years old and his ears seemed naturally gifted being able to replicate melodies on one or two listens.

The infamous “Death of Human Music” movement coincidentally started the same year that Claude was born. The incident started with the strike of musicians from the San Francisco Symphony. It had been the fourth consecutive year that they had fought for fair labor rights. Management eventually had enough with trying to continuously haggle with the musicians over their contracts and successfully implemented the first instance of artificial intelligence orchestral players to replace all of the musicians. The technology was developed and refined by researchers at UCLA who had approached the orchestra for several years. Orchestras around the world saw this as an example and quickly moved to follow suit. The technology allowed them to save expenses and create larger profits while providing more accurate and detailed performances. The world saw the gradual eradication of human performers in professional ensembles. Conservatories and music education shifted away from performance to primarily solely composition and technological studies. The shape and understanding of the music industry and practices were eroding into more accessible forms for the large public.

Claude was four years old when his mother disappeared from his life. He has little, if any, memory of what she looked like, sounded like, how she loved him. His parents’ marriage increasingly fell apart as she lost opportunities in favor for newly developed singing androids. When they were older, Clara recounted to him that their parents would always fight late at night, whenever their mother would come home from singing in local choir. Their father constantly tried to convince her to take up learning about music technology, but she remained headstrong about singing. Eventually, she became an object of scorn to their father, unwilling to adapt to this new musical direction. And one day, she just walked away. Their father now works in the

prestigious WonderSong Technologies, a company dedicated to the advancement of artificial emotional intelligence in musical composition and performance. And their mother is now nothing but a source of silence and emptiness.



“Better save that last composition, might be worthwhile in the future,” Claude thought as he arrived at the venue.

“Composition successfully saved,” answered Amadeus, the robotic voice of SmartBuds.

Claude entered the building, scanned his digital ticket at the booth, and gathered in the long line leading to the doors of the concert hall. The path leading to the hall was an exhibit of ancient artifacts of technology in display cases and infographic posters lining the walls.

The first case contained the very first gramophone recording of one of Bach’s violin sonatas, a selection of CDs by human performers, and pictures of human choirs in churches apparently singing his works. “How strange...” he thought. “Why would anyone need a physical form of a recording that would never change no matter how many times you play it? It’s redundant, monotonous, a waste of space.”

The second case contained several original manuscripts of Bach’s preludes, cantatas, and chorales. “How primitive...” he pondered. “The process of trial and error while physically writing down your ideas in real time... How inefficient and wasteful. Ideas are lost by the time that you put that pen down to the paper. Productivity is key-”

“Hey, can you move along? You’re holding up the line.” Claude’s thought was interrupted by the elderly man standing behind him.

“Oh, yes! I’m terribly sorry,” he says quickly to avoid any more embarrassment and briskly walks to catch up to the rest of the line.

“Over here!” Claude hears from an all too familiar voice. He made his way over to the source and greeted his sister.

“Gosh, you were almost late again. Were you spending too much time thinking to get those earbuds to write for you again? You gotta disconnect from those for a little bit,” Clara scolds as she reaches up and pulls out the SmartBuds from his ears.

“Yeah yeah,” Claude dismisses as he puts them away in their case. “I hope this one’s more interesting than the last.”

“What do you mean? Wasn’t it cool how Florestan was able to sing all the parts of that song by himself?”

“I mean, sure it’s cool. But what is it really contributing to music’s value? It’s all just a gimmick.”

“What are you on about music’s value? You of all people should already know since you’re working with... what’s her name again? Jackie? There’s barely anything left to build on. There are only so many possibilities once the algorithms have gone through all the combinations.”

“Look, I’m not going to-” Claude was cut off by the lights dimming and the voice on the loudspeaker system. “We’ll continue this later,” he muttered.

“Welcome to our special concert tonight celebrating Johann Sebastian Bach’s 500th birthday. Before the performance begins, we would like to acknowledge those that made this event possible. Thank you to our artists-in-residence, Florestan and Eusebius, originally from

UCLA. This is our tenth concert featuring them and we hope to continue collaborating in the future. Thank you to our sponsors from UCLA, San Francisco Conservatory of Music, and WonderSong Technologies. Tonight, we're very fortunate to have the support of the Bach Institute. With the recent discovery of an unreleased Bach melodic fragment from a newly found manuscript, Eusebius have been able to compose a completely new piece to pay homage to the composer by finishing one of his uncompleted works with a modern twist. We hope to continue to provide our audiences with state-of-the-art music and techniques. Without further ado, please welcome Florestan debuting Bach and Eusebius's latest work, *Unfinished Chorale!*"

As the audience erupted in grand applause, a piano was elevated onto the stage from below and Florestan entered from the side of the stage. Florestan bowed to the audience before sitting on the piano bench. "Looking the same as always," Claude thought. "I have to admit, he is quite well-dressed and following proper etiquette, even if it is silicon running through that body instead of blood."

Silence filled the room as everyone was in anticipation and wonder of what new sound awaited them. Florestan's hands started to move and the hall was filled with the sounds of the newly composed piece. It started as an ordinary Bach chorale, most likely as a result of Eusebius's study of Bach's counterpoint throughout all of his works. The piece eventually took a turn from the homophonic structure and deviations in the melody led to increasingly dissonant and random. Claude listened, trying to decipher the logic behind Eusebius's composition, but couldn't. It was as if Eusebius was trying to make sense of the randomness introduced to the melody and trying his hardest to adhere to Bach's rules of harmony without looking at the larger picture of the piece. Were the hundreds of years of chorale, sacred church music, and structured harmony meant to lead up to this moment? Could this still be called Bach?

At the end of the piece, the audience once again erupted in a standing ovation in awe of the new creative style. Next to him, Clara has tears rolling down her face as she exclaims, "How cool was that?! What a unique sound! Bach would surely be happy to know that his piece was finally completed like this!" Claude just sat there, confused and perplexed, trying to decipher the meaning of the performance.



The rest of the concert was just as mundane as the previous ones. The public received the performer with approval, but Claude couldn't understand it. Sure, the music was accurate, no wrong notes and everything was strict in time. But the music seemed like it was lacking something, but he couldn't figure out what it was. It was as if there was a context missing from the music, lost in time and space. Taking out his SmartBuds again, Claude parted ways with his sister who finally recovered from her emotional outburst towards Florestan's playing.

"I told you it would be worth it, we'll have to do this again next time!" she declared.

"Yeah, whatever you say," Claude brushed off.

It was getting late and Claude felt somewhat tired after being holed up in the hall for several hours. He made his way to the bus stop across the street rather than trying to walk all the way back up to his apartment. As he stood there, he heard an enchanting sound coming from slightly up the street. As he approached the source, he took off his earbuds and came across a rugged woman with graying hair singing the tune that interested his ears.

Claude couldn't remember the last time he saw someone, a real human, singing in person. Years ago, the displacement of professional singers left the streets filled with beggars and the

desperate trying to make ends meet with the talent that no longer benefitted them. This one didn't seem much different, but she seemed to radiate a different aura, one of passion yet familiarity.

"That's a beautiful tune you're singing, and your voice is quite soothing too," Claude said to the woman.

"Thank you dear boy. It's been a while since someone took the time to hear me out," the woman responded. "This song is something that I wrote years ago, back before we were all out of work, before soul and emotions became so disconnected in performance. But I never did get a chance to do anything with it before the movement started. And then I lost everything..."

"I'm sorry to hear that... Could you sing more for me? I don't believe I've ever heard something quite like this before."

"Of course, it's all I know after all."

The woman sang the song again before switching to another song, akin to a lullaby, which equally captivated Claude. There was something so warm and comforting about hearing the woman sing, a complete contrast to the concert that he attended.

"I believe your bus is now here. Do take care boy."

Claude snapped out of his bewilderment, he hadn't noticed that the bus had already pulled in. "Oh yes, thank you. You take care too," he shouted back before putting his SmartBuds on again.

Claude entered his room and woke up his computer from sleep mode. "Hey Jackie, I'm back. What's the progress on the song?"

From the speakers of his computer, Jackie responded, "Great news Claude! I've finished writing out the melody after generating 968 different variations. I think you will like this the best in accordance to previous compositions. Just let me know if you approve and I'll start generating the harmonies."

Claude thought about listening to Jackie's result and his SmartBuds started playing the demo. What he heard was the same melody that the woman at the bus stop was singing.