**Process Music**

Yenkai Huang

In this project, I have composed a musical piece called "Sound of Data." My goal was to capture the frequency of source code that underlies modern technology. Instead of simply adjusting envelope, attack, or sleep time of a sound and randomly accessing a list of harmonies, I devised an idea to use individual characters within the code as sleep signals, which generate the rhythm of the music.

To explore this concept, I extracted the HTML from Dartmouth's website and saved it in a .json file. I conducted a basic statistical analysis, and the distribution of character count appears as follows:

e: 11545,

-: 10802,

⎵: 10631,

i: 9962,

a: 9747,

.: 8817,

l: 8127,

s: 8051,

t: 7422,

d: 6753,

": 5452,

0: 5310,

1: 5299,

2: 5264,

o: 5015,

m: 4760,

/: 4588,

n: 4419,

c: 4408,

3: 3915,

r: 3831,

5: 3231,

<: 3077,

>: 3077,

v: 3070,

4: 3025,

=: 3020,

p: 2957,

h: 2832,

g: 2826,

6: 2673,

7: 2653,

8: 2613,

f: 2572,

u: 2489,

9: 2365,

y: 2215,

b: 2063,

\_: 1971,

w: 1697,

k: 1022,

x: 1016,

%: 996,

z: 960,

F: 507,

j: 419,

;: 415,

I: 366,

A: 343,

:: 335,

#: 333,

&: 330,

,: 325,

M: 321,

D: 318,

C: 318,

B: 315,

?: 305,

L: 299,

H: 255,

E: 248,

S: 244,

q: 235,

V: 235,

T: 205,

P: 200,

R: 199,

G: 181,

U: 175,

O: 174,

N: 174,

Z: 159,

J: 154,

Q: 154,

W: 146,

K: 145,

X: 129,

Y: 112,

+: 64,

↵: 42,

’: 20,

(: 13,

): 13,

{: 10,

}: 10,

é: 4,

|: 3,

\: 3,

!: 2,

©: 2,

\*: 1,

–: 1,

$: 1,

[: 1,

]: 1,

Next, I categorized the signals into 10 groups: [a-z], [A-Z], digits, space bar, "<", ">", "{", "}", "/", and other special characters. This experiment demonstrates the concept of mapping code characters to musical compositions, prompting an intriguing discussion about how the same function might sound different due to varying syntax in different programming languages. Conversely, the same function in different languages might produce completely different sounds. I find this aspect particularly fascinating.

Overall, this project has demonstrated the potential of using source code as a basis for generating music, opening up a world of possibilities for artistic expression and interdisciplinary collaboration between musicians, programmers, and other creative professionals.