# ECE 329: Intro to Computer Music

## Final Proposal

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### 1. Overview of the Work

I am planning to develop an application to generate a piece of music. I believe the most creative work as a musician is to generate my own unique music. This time, I would like to get several financial and economic datasets and then use an algorism to transfer the data into notes. At last, generate a music file by notes and CSound. Briefly, we can get a derivative song algorithmically generated from financial derivatives, such as INTC, NQUSA, continuous sweet crude oil futures, and so on. It is a chance to have a listen with what finance wants to sing.

### 2. Tools

This project will use Python to generate scores, and then use CSound to play the scores in different instruments. For the financial datasets, I will use the Quandl's Python package. The Quandl package uses Quandl's API and makes it amazingly easy to get financial data. Also, the node choices will be informed by the music theory.

### 3. Research.

For this project, I will need to learn many things. The first part is the CSound. I need to be familiar with the operations in CSound. I will go through some online guides for CSound and try more examples. The second part is Python. Although I have some experience in Python, it is the first time I use Python to generate music. I need to learn something about the Quandl package and try to process the dataset. Also, I need to learn how to modify the pitch, octave, time, duration, etc. and how to generate nodes into the .sco file which can be used by CSound.

### 3. Intersections

*Topic: Students are able to creatively integrate theory and practice from across disciplines or from experiences outside of the classroom to address complex questions.*

I strongly agree with this statement. The full name of my major in China is Computer Science and Technology ('Internet+' Experimental Class for Compound General Talents). This goal of this class is to give each student a huge background with different subjects. In order to integrate theory and practice from across disciplines, we have courses for many subjects, such as, Math, Electric Engineering, Computer Science, Communication, Economics, Information Management, Mechanics, Phycology and so on. At the very beginning, I often complained that I must take many more courses than others. With the time passing, I find although the

subjects are different, many pieces of knowledge are similar. It is amazing that the across disciplines background allows me to build a huge knowledge network in my mind. And this network will be helpful to solve complex questions. I believe if I don't have some knowledge of Economics, I will not choose to finish such a final project absolutely which will generate a song algorithmically from financial derivatives.

The experiences outside of the classroom are also very helpful to address questions. With a great interest in music, I started to sing in the choir and play the flute from about 15 years ago. In addition, I often go to a concert and enjoy the live band. So, when I am having the classes this semester, I find all of the experiences outside of the classroom help me to understand the content of this course better.

From my point of view, this course is one of the best instances for solving questions with experience from across disciplines and outside of the classroom.

## 4. References


https://docs.quandl.com/docs/python
http://www.csounds.com/manual/html/PrefaceGettingStarted.html
https://github.com/csound/examples
https://wiki.python.org/moin/PythonInMusic