This paper tries to introduce algorithms to translate a musical performance to sheet music. The paper has two main sections, one dealing with metrical analysis and the other with harmonic analysis.

The metric algorithm is different from the one studied in the first class in that this algorithm attempts to analyze the meter by looking at notes one at a time sequentially instead of analyzing a group of notes, and tries to draw analogies to linguistic interpretation. This algorithm makes an assumption based on the temporal qualities of the first note and uses the following notes to modify that assumption. Although this model might mimic the way human listeners perceive the time signature of a piece of music, this model does not generate accurate results all the time.

The harmonic analysis algorithm also follows a similar approach. The notes in the piece are made to fit all possible major and minor scales. As the piece proceeds, we get more notes and these notes are used to eliminate the “impossible” scales. In case more than one key remains at the end of the piece, the algorithm uses the first note to decide the key.

The difference between the two algorithms is that while the first one follows a more human approach, the second one seems rather mechanical in its process of elimination. Also, the second algorithm hardly considers modulation and polyphony. It seems to me that these algorithms need to be tested on more pieces of music rather than “safe” pieces where the results are mostly favorable to them.