Interestingly the patterns for making bright green sequences (Figure \ref{fig:Str-liishap}b) are very similar for making sequences that are red( Figure \ref{fig:Str-heatmap}b), whereas the patterns found in dark green sequences are (Figure \ref{fig:liishap}a), are similar to patterns for green sequences (Figure \ref{fig:Str-heatmap}a). This helps explain why bright green sequences are difficult to design. From this analysis we can surmise, to make bright green products green, we favor having strings of cytosines, which is similar to red products, moving the sequences out of the green region. To gain more Green character is necessary to add more adenine's, however this typically favors making dimmer products.

Similarly we performed shapely analysis bright and dark sequences of the NIR class. Bright NIR sequences showed very similar patterns (Figure \ref{fig:Str-liishap}d) to the Far Red patterns (Figure \ref{fig:Str-heatmap}c). In contrast the darker NIR products (Figure \ref{fig:Str-liishap}c) showed similar character to green products (Figure \ref{fig:Str-heatmap}a).