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Group CAIN project proposal

Our project is going to consist of video data analysis. We plan to use either a weight lifting video or traffic video (video type is up for discussion) for demonstration. We want to be able to extract certain trends in video as data and analyze the trends using graphical analysis or basic grouping. Some techniques we can possibly use are Symbol-Based Coding (textbook section 8.7), Run-Based Coding (section 8.6), and even Bit-Plane Coding (section 8.8). We want to be able to extract certain trends in video as data and analyze the trends using graphical analysis or basic grouping. These techniques explained in chapter 8 of the textbook are useful with extracting data from video. We can use **coding redundancy** which is a system of symbols (letters, numbers, bits, and the like) used to represent a body of information or set of events. Another topic is **spatial and temporal redundancy** which in the book is defined as “Because the pixels of most 2-D intensity arrays are correlated spatially (i.e., each pixel is similar to or dependent upon neighboring pixels), information is unnecessarily replicated in the representations of the correlated pixels. In a video sequence, temporally correlated pixels (i.e., those similar to or dependent upon pixels in nearby frames) also duplicate information.” A variety of references we can use in our project are included in trials explained in Predictive Coding (section 8.10).

Video demonstration: https://youtu.be/5CxvMrzKk20