Sonification of Time-series Data Sets[1] HAOWEN XI, Research Professor, ANDREW KELLEY, Researcher — The purpose of our research is to create an efficient and straightforward sonification algorithm to convert any time-series data set into sound. This allows for data to be communicated through non-speech audio and understood alongside typical visualization techniques, although no widely available or easily understood program currently exists. The time-series data that can be analyzed ranges from stock market prices to atmospheric temperature or neural activity in the brain. This algorithm was accomplished with MATLAB computational software utilizing uncomplicated yet unique mappings of values to determine frequency, duration and dynamic contrast and was coded in such a way as to be easily applied in its current form or replicated in other software languages. Our approach to presenting data has the advantages of being able to easily identify patterns in large data sets, clarifying complex and hard-to-understand data, as well as bringing abstract and intricate scientific data down to an approachable level for the general public. We hope to provide a flexible tool for sonification research and data exploration as well as solve some of the problems that have arisen in this new field.

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