

Compressing Large Computerized Tomography Data Using Wavelets

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Computerized Tomography (CT) is an X-ray-based technique to generate three-dimensional digital twins from real-world objects. Applications can be found in the manufacturing industry, medical imaging, and cultural heritage projects. Today, there exists CT machinery that is able to create volumetric datasets of even hundreds of gigabytes in size.

To make that amount of data manageable, we consider a wavelet-based method exploiting the natural sparsity of the given CT scans when transforming the data into the wavelet domain. In this work, we analyze a huge CT dataset: a Peruvian mummy, taking up about 987 GB of storage space. We show that we can achieve a high compression rate and visually satisfying results.

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