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Looking for a better space for EMRI waveform

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I am going to talk about the possibilities of finding an optimal representation for the EMRI waveform. We can follow the idea of the singular value decomposition (or similar methods, such as principle component analysis (PCA)), when we project the data on the new basis along the direction which are more representative of the data. In this way the dimensions that do not contribute much to reconstruction of the data can be dropped out. This simple technique of the linear algebra can be extended to the methods used in artificial intelligence (AI) such as autoencoders. They can be seen as the extension of the linear approach to nonlinear spaces. We are going to explore the variety of these methods up to the most modern ones such as transformers, which have in recent year revolutionised AI field.

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