

Twenty Years of Time Series Classification: From Nearest Neighbors to ROCKETS and Beyond

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With its prominent applications in economy, finance, medicine and engineering, time series classification is one of the essential fields of artificial intelligence (machine learning). Aforementioned applications include signature verification using touch screens, activity recognition based on accelerometer data, user identification based on keystroke dynamics and many others.

In this talk, we review most important approaches for time series classification from the last two decades. These approaches range from simple nearest neighbors with dynamic time warping over deep learning-based techniques such as convolutional networks, residual networks (ResNet) and transformers to recent methods based on Random Convolutional Kernel Transform (ROCKET).

An unexpected lesson learned from the review of literature is that relatively simple methods work surprisingly well for time series classification.

References

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