# Deep Learning Architectures for Time Series forecasting not based on Transformers

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## Introductory Notes

### Mixing Architectures as an alternative to Transformers

The first such architecture *MLP-Mixer* is presented in [1]. MLP-Mixer relies entirely on MLP networks which are applied repeatedly across spatial locations or feature channels.

## References

[1] [MLP-Mixer: An all-MLP Architecture for Vision, Ilya Tolstikhin et al, Google, 2021](https://github.com/dimitarpg13/deep_learning_for_time_series_forecasting/blob/main/literature/articles/MLP-Mixer-An_all-MLP_Architecture_for_Vision_Tolstikhin_Google_2021.pdf)

[2] [A decoder-only foundation model for time-series forecasting, A. Das et al, Google, 2024](https://github.com/dimitarpg13/deep_learning_for_time_series_forecasting/blob/main/literature/articles/A_decoder-only_foundation_model_for_time-series_forecasting_Das_Google_April_2024_Preprint.pdf)

[3] [Tiny Time Mixers (TTM): A Powerful Zero-Shot Forecasting Model by IBM, Nikos Kafritsas, 2024, Towards Data Science](https://towardsdatascience.com/tiny-time-mixers-ttm-a-powerful-zero-shot-forecasting-model-by-ibm-576b0e0af583)

[4] [Tiny Time Mixers (TTMs): Fast Pre-trained Models for Enhanced Zero/Few-Shot Forecasting of Multivariate Time Series, V. Ekambaram et al, IBM, 2024](https://github.com/dimitarpg13/deep_learning_for_time_series_forecasting/blob/main/literature/articles/Tiny_Time_Mixers-Fast_Pre-trained_Models_for_Enhanced_Zero_Few-Shot_Forecasting_of_Multivariate_Time_Series_Ekambaram_IBM_2024.pdf)

[5] [TSMixer: Lightweight MLP-Mixer Model for Multivariate Time Series Forecasting, V. Ekambaram et al, IBM, 2023](https://github.com/dimitarpg13/deep_learning_for_time_series_forecasting/blob/main/literature/articles/TSMixer-Lightweight_MLP-Mixer_Model_for_Multivariate_Time_Series_Forecasting_Ekambaram_IBM_2023.pdf)

[6] [TimesFM: Google's Foundation Model For Time-Series Forecasting, Nikos Kafritsas, 2023, AI Horizon Forecast](https://aihorizonforecast.substack.com/p/timesfm-googles-foundation-model)

[7] [MOIRAI: Salesforce's Foundation Transformer For Time-Series Forecasting, Nikos Kafritsas, 2023, AI Horizon Forecast](https://aihorizonforecast.substack.com/p/moirai-salesforces-foundation-transformer)

[8] [PatchTST for Time Series Forecasting: Original Results and My Single-Channel Experiments, Lalf Klein, 2023, Medium](https://medium.com/@lalf_klein/patchtst-for-time-series-forecasting-original-results-and-new-single-channel-experiments-f375699f7b91)

[9] [A Time Series is Worth 64 Words: Long-term Forecasting with Transformers, Y. Nie et al, IBM, Princeton U., 2023](https://github.com/dimitarpg13/deep_learning_for_time_series_forecasting/blob/main/literature/articles/A_Time_Series_is_Worth_64_Words-Long-term_Forecasting_with_Transformers_Nie_IBM_2023.pdf)