

Summer 2025

Aatu Selkee

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Main research topics

Time series analysis with Gaussian processes:

- ▶ How to represent a difficult time series with a Gaussian processes
 - ▶ Trend + Periodicity (daily, weekly, monthly, yearly) + Peaks + Noise
- ▶ Choose the correct covariance function to model these effects.
- ▶ How to scale model training to 50 000 training points.
- ▶ How to improve the performance of Gaussian processes with a new feature representation from deep learning.

Gaussian processes

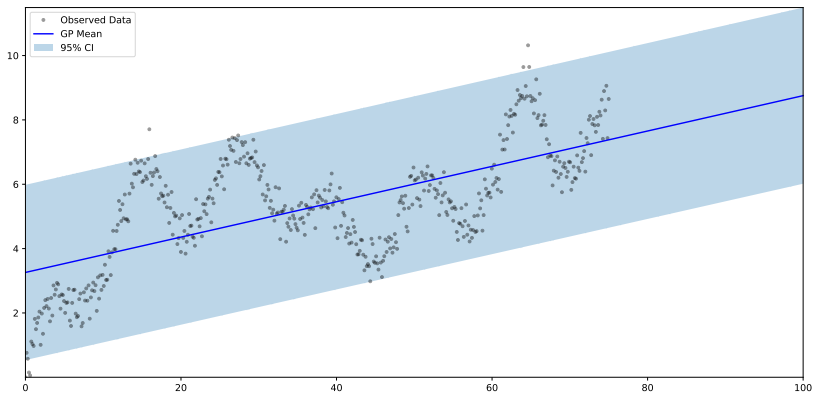


Figure: The model captures the linear trend.

Gaussian processes

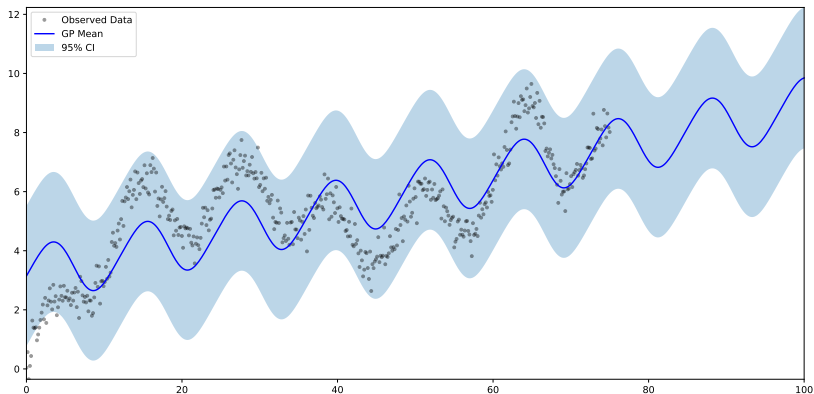


Figure: The model captures the linear trend and the periodicity.

Gaussian processes

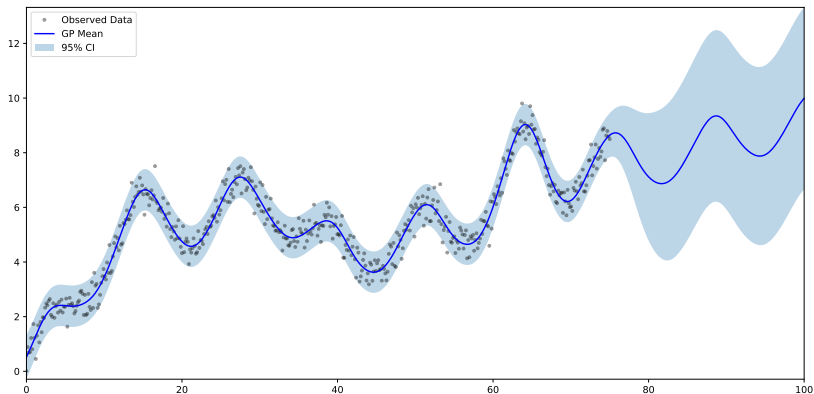


Figure: The model captures the linear trend, the periodicity and the varying peaks. Only random noise is impossible to model.