

Noisy Input Gaussian Processes for Timeseries: nignp

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This document describes an adaptation of the Noisy Input Gaussian Process (NIGP) method in section 2.4 of [1] and [2] to the specific situation of timeseries modeling. In this task, the output at one time point is simultaneously the input to the following time point, which means that the input and output noise variances should be tied together.

References

- [1] Andrew McHutchon. Nonlinear modelling and control using Gaussian processes. PhD thesis, University of Cambridge, Department of Engineering, Cambridge, UK, 2014.
- [2] Andrew McHutchon and Carl Edward Rasmussen. Gaussian process training with input noise. In *Advances in Neural Information Processing Systems 24*, pages 1341-1349, Granada, Spain, 2011. Curran Associates, Inc.