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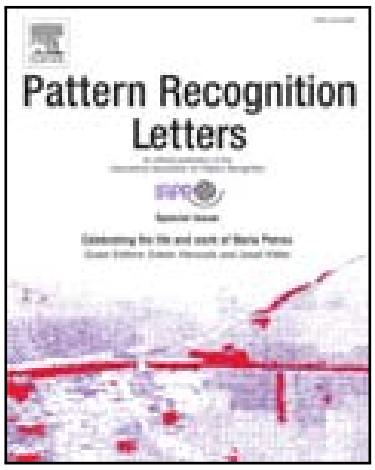

Variational Gaussian Process for Multisensor Classification Problems

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Relevant Conference publication(s) (submitted, accepted, or published): Published: N. Rohani, P. Ruiz, E. Besler, R. Molina and A. K. Katsaggelos, "Variational Gaussian process for sensor fusion," 2015 23rd European Signal Processing Conference (EUSIPCO), Nice, 2015, pp. 170-174.
Justification for re-publication: In the submitted manuscript, we introduce the research work derived from the published paper mentioned above. The novelties with respect to the previous work are detailed below. 1) The bibliography has been updated with the new works in the literature. 2) We introduce a new prior distribution, which generalizes the one introduced in the previous work. 3) We introduce a new method to estimate the model parameters, which allows to estimate the so-called length-scale parameter in Gaussian Processes literature. In the previous work, this parameter is a constant. 4) We introduce a new classification rule which takes into account the uncertainty of the estimated model to produce more accurate predictions. 5) We introduce a new section called "Related" Models, where we provide a discussion about the relationship between the most similar models in the literature. 6) In the experimental section, the proposed method is compared with more previous methods than in the published work. 7) All the compared methods are tested on new datasets.

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