Statistical Machine Learning
Sharif University of Technology
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Feb., 2020
CE 40-729

Reading Assignment 1

(Gaussian Process)

Presentations Date & Time: Sunday, February 28th (1399/12/10)
Please upload the presentations on Quera on February 27th (1399/12/9)
Each presentation 20 Minutes

The first module of the course is about Bayesian Non-Parametric models. In this assignment we focus on different aspects of Gaussian Process (GP). In specific, we will learn about efficient computation of GP with different methods and Deep Gaussian processes.

Gaussian Process (GP) General Assignment (reading for all groups)

1. General assignment for all groups.
   Read Reference [0].
2. Deep Neural Networks as Gaussian Processes
   References: [00]

Presentations

1. Group 1: Syn2Real transfer learning for image deraining using Gaussian processes
   Reference [1]

2. Group 2: Gp-nas: Gaussian process based neural architecture search
   References: [2]

4. Group 3: Hierarchical gaussian process priors for bayesian neural network weights
   References: [3]

5. Group 4: Stochastic Deep Gaussian Processes over Graphs
   References: [4]

References

[0] C. E. Rasmussen & C. K. I. Williams, Gaussian Processes for Machine Learning, the MIT Press, 2006.

[00] Lee, Jaehoon. "Deep Neural Networks as Gaussian Processes." Workshop on Accelerating the Search for Dark Matter with Machine Learning. 2019.

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[1] Yasarla, Rajeev, Vishwanath A. Sindagi, and Vishal M. Patel. "Syn2Real transfer learning for image deraining using Gaussian processes." *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2020.

[2] Li, Zhihang, et al. "Gp-nas: Gaussian process based neural architecture search." *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2020.

[3] Karaletsos, Theofanis, and Thang D. Bui. "Hierarchical gaussian process priors for bayesian neural network weights." *arXiv preprint arXiv:2002.04033* (2020).

[4] Li, Naiqi, et al. "Stochastic Deep Gaussian Processes over Graphs." *Advances in Neural Information Processing Systems* 33 (2020).