



Technische
Universität
Braunschweig



Vortrag im Gästeprogramm des GRK 2075

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Manifolds of deep neural structures

Donnerstag, 13.12.2018, 13.30 Uhr
Institut für Wissenschaftliches Rechnen
Mühlenpfordtstrasse 23, 8. OG, Raum 812

Optimization is still one of the key problems in machine learning. There are some cases where neither analytical nor combinatorial solutions are known but we can handle the problem as a "random walk" on a Riemannian surface [1]. During the talk we discuss several manifolds closely connected to "shallow" or "deep" models (data, loss [1,2], generalization, gradient graph [3] and hyper surfaces) while focusing on the expressive power of the tangent bundle.

1. Ollivier, Y. (2015). Riemannian metrics for neural networks I: feedforward networks. *Information and Inference: A Journal of the IMA*, 4(2), 108-153.
2. Amari, S. I. (1998). Natural gradient works efficiently in learning. *Neural computation*, 10(2), 251-276.
3. Choromanska, A., Henaff, M., Mathieu, M., Arous, G. B., & LeCun, Y. (2015). The loss surfaces of multilayer networks. In *Artificial Intelligence and Statistics* (pp. 192-204)

Kontakt

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