12
апреля
вторник

Коллоквиум факультета компьютерных наук НИУ ВШЭ

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Physics Informed Machine Learning

Machine Learning (statistical engineering) capabilities are in a phase of tremendous growth. Underlying these advances is a strong and deep connection to various aspects of statistical physics. There is also a great opportunity in pointing these tools toward physical modeling. In this colloquium I illustrate the two-way flow of ideas between physics and statistical engineering on three examples. First, I review the work on structure learning and statistical estimation in power system distribution (thus physical) networks. Then I describe recent progress in constructive understanding of graph learning (on example of inverse Ising model) illustrating that the generic inverse task (of learning) is computationally easy in spite of the fact that the direct problem (inference or sampling) is difficult. I conclude speculating how macro-scale models of physics (e.g. large eddy simulations of turbulence) can be learned from micro-scale simulations (e.g. of Navier–Stocks equations).

12 апреля, 18:10-19:30
Кочновский проезд, 3
Лекционный зал Декарт, 3 этаж

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