

# Distance Function and Effective Dimension in a Kernel Analysis of Deep Networks

SERGEI PEREVERZYEV

Johann Radon Institute, Austrian Academy of Sciences, Austria

*Email:* `sergei.pereverzyev@oeaw.ac.at`

---

Training of deep networks is interpreted sometimes as a data-driven determination of the kernel function in supervised kernel learning. In this model the kernel representation changes iteratively from one hidden layer to another. Then it is natural to assume that the target of the learning process does not belong to reproducing kernel Hilbert spaces generated by intermediate kernels (otherwise no further iterations are needed) that corresponds to the so-called misspecified kernel setting, which has attracted attention again recently. In the talk we are going to discuss how recent results in the above setting can be used to estimate the effectiveness of the network architecture.

Joint research with Shuai Lu (Fudan University, Shanghai) and Peter Mathe (WIAS-Berlin)