Vienna School of Mathematics

PhD Colloquium

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Iterative Construction of Neural Networks

Abstract: In typical neural network design, we define an architecture and train it on a dataset. In this talk, we will explore a different approach: constructing neural networks iteratively through a process of composition and addition. By progressively combining simpler networks, we can approximate certain functions very efficiently.

This method relies on the combination of neural network operations — such as addition and composition — and is supported by the Banach Fixed Point Theorem, which provides a mathematical basis for proving convergence of the iterative process. In the talk, we will see simple examples of function approximation using this iterative approach.

December 9 2024, 15:30-16:30

TUForMath Room DAEGH18, Freihaus, TU Wien (Wiedner Hauptstraße 8-10)