

**THE CATHOLIC UNIVERSITY OF AMERICA
Washington, DC 20064**

**SEMINAR IN FUNCTIONAL ANALYSIS
AND RELATED AREAS**

Wednesday, November 29, 2023

4:45 p.m. - 6:00 p.m.

SPEAKER: Professor Věra Kůrková
Institute of Computer Science of the Czech Academy of Sciences

TITLE: Approximation of classifiers by deep ReLU networks

ABSTRACT: Rapid development of experimental research and successful practical applications of deep networks inspires many theoretical questions. This talk focuses on approximation capabilities of multilayer (deep) networks, with rectified linear computational units (ReLU) which are one of the most popular network architectures. We will explore the effect of network depths and numbers of their parameters on behavior of approximation errors. To obtain probabilistic bounds on approximation errors, we will employ concepts from statistical learning theory (growth function, VC dimension) and high-dimensional geometry (concentration of measure). We will address the dilemma between approximation accuracy and consistency in learning from random samples of data.

The presentations will be given via Zoom. The corresponding link is as follows

<https://cua.zoom.us/j/87627066209?pwd=cWxxTlpIVko5YitkbVo2V0crMXk3QT09>

Meeting ID: 876 2706 6209

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Web page:

<https://mathematics.catholic.edu/faculty-and-research/mathematics-seminar/index.html>

(We are also attaching a PDF file with this announcement.)