

Stochastic Machine Learning

Chapter 02 - Universal Approximation theorems

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Universal approximation theorems

In these lectures we cover various forms of universal approximation theorems (on the blackboard).

Literature:

- ▶ Hornik (1991)
- ▶ Döhler and Rüschendorf (2001)
- ▶ Kratsios (2021)

You might also want to study a bit the Hahn-Banach theorem.

-  Döhler, Sebastian and Ludger Rüschendorf (2001). „An approximation result for nets in functional estimation“. In: **Statistics & probability letters** 52.4, pp. 373–380.
-  Hornik, Kurt (1991). „Approximation capabilities of multilayer feedforward networks“. In: **Neural networks** 4.2, pp. 251–257.
-  Kratsios, Anastasis (2021). „The universal approximation property: characterization, construction, representation, and existence“. In: **Annals of Mathematics and Artificial Intelligence** 89.5, pp. 435–469.