



**University of
Zurich** ^{UZH}

Department of Economics – Neuroeconomics Seminar

April 23, 2026 - 17:00 - 18:00

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University of Oxford

Understanding learning in biological and artificial neural networks

A wide range of consequential decisions involve some degree of uncertainty arising from Biological systems learn in stereotyped ways. Learning is path dependent, with critical periods in early in development. Biological systems benefit from structured training curricula, and undergo characteristics reductions in flexibility later in life. I will discuss how all of these phenomena can occur spontaneously in artificial neural networks trained with gradient descent. I will discuss the paradox that ANNs seem to benefit less from curricula than humans do, and offer a new theory that explains this discrepancy, in which curricula are mainly useful for “unlearning”. I will describe evidence that the structure and dimensionality of representations changes across the human lifespan. Despite their implementation-level differences with biological models, ANNs offer a remarkably useful model system for understanding biological learning.