

Theory Overview

Friday 8 November 2024 10:50 (40 minutes)

In this talk I will give a biased review on the work at the intersection of machine learning and theoretical physics. This includes how we can use transformers to obtain symbolic expressions without having information about the target expression. In turn, I present a benchmark human physicists have failed in solving, namely that of compact Calabi-Yau metrics and give a short status report on ML attempts. I then discuss how we can use efficient use of automatic differentiation to enable for the first time the large-scale exploration of string theory solutions. To round it off I shortly comment on how we can use automated theorem proving to formalize certain questions in theoretical physics and how theoretical physics can help us building more efficient neural networks.

Track

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Session Classification: Plenary talks