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How easily can neural networks learn relativity?

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We study the ability of different deep neural network architectures to learn various relativistic invariants and other commonly-used variables, such as the transverse momentum of a system of particles, from the four-vectors of objects in an event. This information can help guide the optimal design of networks for solving regression problems, such as trying to infer the masses of unstable particles produced in a collision.

Primary authors: CHITTURI, Kartik (University of Texas (US)); ONYISI, Peter (University of Texas (US))

Presenter: CHITTURI, Kartik (University of Texas (US))

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