

1155-14-172

Hamza Jaffali (hamza.jaffali@utbm.fr), 90010 Belfort, France, and **Luke Oeding*** (oeding@auburn.edu), Department of Mathematics and Statistics, Auburn, AL 36849. *Learning Algebraic Models of Quantum Entanglement.*

We give a thorough overview of supervised learning and network design for learning membership on algebraic varieties via deep neural networks. We show how artificial neural networks can be trained to predict the entanglement type for quantum states. We give examples for detecting degenerate states, as well as border rank classification for up to 5 binary qubits and 3 qutrits (ternary qubits). (Received January 11, 2020)