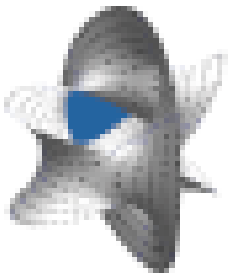

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Using generative adversarial networks to produce knots with specified invariants

Wednesday 15 December 2021 18:00 (30 minutes)

Knots in 3-dimensional space form an infinite dataset whose structure is not yet well understood. Recently techniques from machine learning have been applied to knots in an effort to better understand their topology, however so far these approaches have mainly involved techniques from supervised and reinforcement learning. In this talk I will outline an approach to using generative adversarial networks (GAN) to produce knots with specified invariant values. In particular, we show how to construct a GAN which takes as input information from the Jones polynomial, and outputs a knot with specified invariants. This is joint work with Amy Eubanks, Jared Slone, and Dan Ventura.

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