QUIVER NEURAL NETWORKS AND THE QR DECOMPOSITION

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MCS B31

Tea: 3:45pm in Room B24

Abstract: We describe an approach to the theoretical analysis of neural network architectures via the representation theory of quivers, thus revealing symmetries of the parameter space of neural networks. An exploitation of these symmetries leads to a lossless model compression algorithm for quiver neural networks with radial activations based on iterated QR decomposition. We prove that gradient descent for the compressed model corresponds to a form of projected gradient descent for the original model. This talk is based on joint work with Iordan Ganev.

See http://math.bu.edu/research/geom/seminar.html or contact Yu-Shen Lin (yslin@bu.edu) or Siu-Cheong Lau (lau@math.bu.edu) for more information.