Quantum Recurrent Neural Networks For Time-Series Tasks

Abstract

We’ll discuss the quantum computing version of a classical recurrent neural network, how these models can be used with time-series prediction tasks like forecasting and remaining useful life prediction, and the current state of research in these approaches. We’ll build up from the basics, so no prerequisite knowledge of recurrent neural networks or quantum computing is required!

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I’m a third-year PhD student from Computer Science studying ways for quantum computing in the near-term era to be useful with real-world risk analysis tasks. In particular, I’m interested in the intersection between quantum and Bayesian machine learning and time-series tasks, and am currently working on evaluating the effectiveness of quantum recurrent neural networks on real time-series data.