LLY-GP

Quantum Machine Learning Report

Version 1.0 Beta
Date: 2024-08-20

LLY-GP is part of the LILY Project and focuses on optimization parameter-based quantum circuits. It enhances the efficiency of quantum algorithms by fine-tuning parameters of quantum gates. GP stands for Generativ Qubit Processing, which assigns each word the state of a multi-qubit system and recognizes words through a quantum machine learning process. This approach leverages gradient-based optimization techniques to improve the performance of quantum circuits. The primary goal of LLY-GP is to recognize and assign languages, making it a foundational element in the development of language-aware models. As the LILY Project evolves, LLY-GP will become increasingly important, serving as a critical component in more advanced quantum machine learning models. LLY-GP is available on the LILY QML platform, making it accessible for researchers and developers. For inquiries or further information, please contact: info@lilyqml.de.

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Introduction

In this model, each token is assigned a quantum state. Various optimizers are applied to increase the probability of the correct token being recognized.

Start Values
These are the initial values, including the matrices used to build the quantum circuit and the circuit itself.

Token Matrix: 0.317647 0.000000 1.173913 0.458824 0.040000 1.695652 0.380392 0.080000
1.405797 0.431373 0.120000 1.594203 0.454902 0.160000 1.681159 0.396078 0.200000 1.463768
0.431373 0.120000 1.594203 0.388235 0.280000 1.434783 0.435294 0.320000 1.608696 0.427451
0.360000 1.579710 0.439216 0.400000 1.623188 0.458824 0.040000 1.695652 0.454902 0.160000
1.681159 0.396078 0.200000 1.463768 0.447059 0.560000 1.652174 0.345098 0.600000 1.275362
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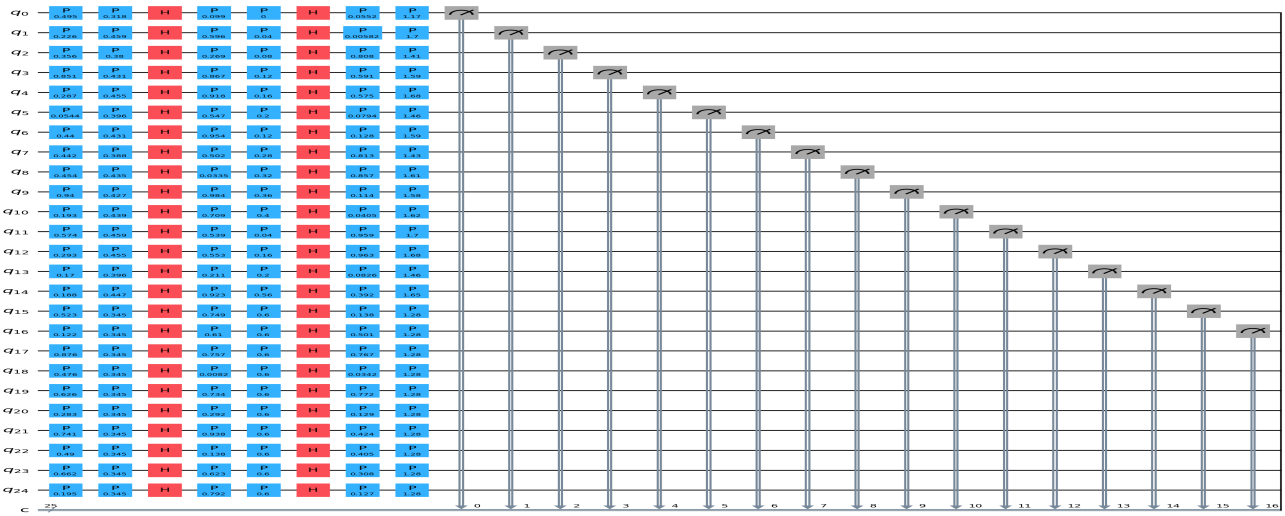
Training Matrix: 0.494673 0.098967 0.055212 0.226186 0.595668 0.005818 0.355642 0.268589
0.807552 0.850975 0.866990 0.590506 0.287406 0.918470 0.575090 0.054414 0.547202 0.079370
0.439703 0.953963 0.127740 0.441975 0.502035 0.813453 0.454390 0.033504 0.856673 0.939651
0.984456 0.114409 0.193260 0.709063 0.040510 0.573630 0.538688 0.958544 0.292948 0.552689
0.962677 0.169864 0.210528 0.082606 0.188401 0.922768 0.391840 0.522917 0.749227 0.137800
0.122299 0.609969 0.500618 0.875923 0.756812 0.766534 0.476186 0.008197 0.034183 0.625651
0.733712 0.772399 0.283337 0.291879 0.128771 0.740725 0.937694 0.423572 0.489672 0.137701
0.405282 0.662097 0.623442 0.308187 0.195432 0.792277 0.126920



Training

Changes