The state of Quantum Computing in 2025

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Abstract

This paper provides an accessible overview of the current state of quantum computing technologies as of September 2025. Aimed at readers with a technical background but no prior experience in quantum computing, it reviews foundational concepts, historical advancements, and leading hardware and software platforms. The paper also discusses practical challenges, potential applications, and the outlook for future developments in the field.

Keywords: Quantum Computing; Quibits; Decoherence; robotics

Introduction

This document is a template for LaTeX. Please use the electronic version of this document as a template when you produce your manuscript for submission to the *Nordic Machine Intelligence*. The paper size is A4 (21 × 29.7 cm).

The introduction section of your paper should include the necessary background information, including an adequate review of earlier findings and the justification for conducting this study.

Materials and methods

The margins in this document are set to 2.5 cm for the top and 1.5 cm for the sides and bottom. The main body of the manuscript is in two columns separated by a 1 cm. The line spacing is 1.1, and the references list has 3 pt spacing between each reference.

Body text is *Computer Modern Bright* (which is quite similar to Calibri) at 10 pt. Level 1 headings are in bold and level 2 headings are in italic.

In the materials and methods section, please describe all necessary details on how the study was performed. Do not include any discussions of the work in this section. Enough information should be given so that other researchers can reproduce your study.

Results

All figures should be numbered consecutively with the figure legend indented 0.5 cm on each side. See figure 1 for an example. Figures may be in color or black and white and must be of such quality that they produce clear and sharp printouts on an ordinary (color) laser printer.

What to include

Use this section to present the results from the measurements or studies that were described in the last section, but without going into any discussion about the results.

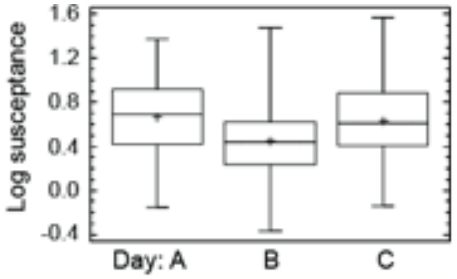

Figure 1: Box-plot showing median value (line), mean value (cross), middle 50 % (box) and smallest and largest point within 1.5 interquartiles from the box (whiskers) of all measurements on days A, B and C.

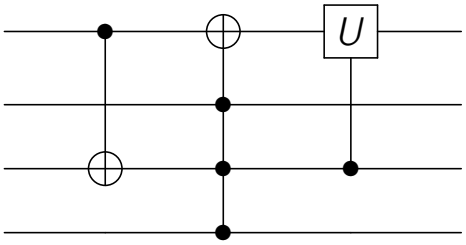

Figure 2: Example of a simple quantum circuit. Each horizontal line represents a qubit, and the symbols show basic operations that can be performed on them.

Discussion

Now you can discuss your results. Emphasize the new and important aspects of the study and the conclusions that follow from them. Do not repeat in detail data or other information given in the Introduction or the Results section. After this section there may be sections called

Conclusion and Acknowledgments. The last section is References.

Reference style

The journal of *Nordic Machine Intelligence* uses primarily the Vancouver style of references with numbers in square brackets in the text and a numbered list in the Reference section.[1] However, using the Harvard reference style will also be accepted in some cases.

Conflict of interest

Authors state no conflict of interest. (Either keep this sentence or describe any comflict of interest.)

References

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