

Graduation Project Proposal

ZX-QAL: Adding ZX-calculus to QAL

QAL (Quantum Algorithms Lab) is an innovative visual interactive app that is currently under development for researching and teaching quantum algorithms and related mathematical fields. For more info on QAL, check <https://q-info.github.io/QAL-Lite>.

The [ZX-calculus](#) is a visual notation for reasoning about quantum theory.

Project Description: QAL is currently implemented as a web app. In this graduation project students will be responsible of putting their software development skills towards providing support for the ZX-calculus in QAL as an extra interactive visual in addition to QAL's built-in and novel interactive visuals, making use of the underlying QAL infrastructure for supporting interactive visuals.

Team Size: 2-3 members.

Main Technologies: JavaScript. (Using Python-based technologies, such as [PyZX](#), are optional and, if needed, can be picked up quickly during the development of the graduation project.)

Prerequisites: Excellent software development skills. General mathematical knowledge, particularly of linear algebra, of quantum algorithms, and/or of ZX-calculus, is a plus, but not absolutely necessary.

Frameworks: QAL is currently implemented as a client-side web app that uses few simple libraries and frameworks (e.g., well-known JavaScript libraries such as jQuery, jQueryUI, ... etc.). How these libraries are used in QAL can be explained to the students.

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