

Text Summarisation with Quantum Natural Language Processing (Internship)

Context

Quantum natural language processing (QNLP) is the use of quantum computing to solve NLP tasks faster than any classical computer.

In a recent approach¹, text is represented as parameterised circuits that are optimised using a hybrid classical-quantum algorithm. This approach was implemented on noisy intermediate-scale quantum (NISQ) hardware, with promising experimental results on text classification and question answering.

Objective

The aim of the internship is to apply QNLP to the problem of automatic text summarisation.² The student will design quantum algorithms, investigate their asymptotic speedup compared to classical ones and implement proof-of-concept experiments to evaluate them.

Supervision

The internship will be hosted at the **Laboratoire d'Informatique & Systèmes** in Marseille, supervised by:

Alexis Toumi (alexis@toumi.email)

Benoit Favre (benoit.favre@lis-lab.fr)

Giuseppe di Molfetta (giuseppe.dimolfetta@lis-lab.fr)

Application

Send an email to the people above with:

a CV

a cover letter

an academic transcript

References

Bob Coecke, Giovanni de Felice, Konstantinos Meichanetzidis and Alexis Toumi **Foundations for near-term quantum natural language processing** (2020) ↗

Dan Gillick and Benoit Favre **A scalable global model for summarization** (2009) ↗