

IEEE BITS | The Information Theory Magazine

Call for Papers

Special Issue on

‘Quantum Computation and Information’

Quantum computers are becoming rapidly more sophisticated and complex and nascent quantum networks are popping up around the globe. At present, small quantum computers from a variety of companies can already be accessed on the cloud. In this special issue, we will examine how information theorists are already helping the "second quantum revolution" and what potential opportunities lie ahead.

Papers on a range of topics are invited, including, but not limited to:

- Challenges in quantum error correction and fault-tolerant quantum computation including finite-rate codes, novel decoders, and physical error channels.
- Classical control infrastructure for executing quantum algorithms and obtaining results
- Fundamental results describing differences between classical and quantum network protocols
- Use of entangled quantum states as a resource for classical signal processing
- Quantum cryptography, post-quantum classical cryptography, and the implication of quantum computers on legacy encryption

Submission Instructions

White Paper: Prospective authors are invited to submit a white paper (limited to three pages single column 11-point font size), containing manuscript title, motivation / significance, outline, representative references, and the author list with contact information and short bios. Full articles will be invited based on the review of white papers.

Full Articles: The full articles must be of tutorial/overview/survey nature, in an accessible style to a broad audience, and have significant relevance to the scope of the Special Issue. The full article would include up to 12 double column pages including references, 11-point font size, at least one figure (to be hosted at the website), up to 30 references, at least 1.25" margin on left and right sides, and 1" margin from top and bottom.

The articles should not have been published or be under review elsewhere. For submission guidelines, see the Information for Authors at <https://www.itsoc.org/bits/information-authors>.

Relevant Dates:

- White paper submission: 1 April 2022
- Manuscript invitation: 20 April 2022
- Manuscript submission: 20 June 2022
- Manuscript reviews: 20 July 2022
- Manuscript final version: 20 August 2022
- Special Issue Publication: December 2022

Special Issue Editors

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