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Deyan Mihaylov

(University of Cambridge and Cambridge Quantum Computing Ltd (CQC))

Industrialising quantum computing: from theory to reality

The field of quantum computing has been around since the early 1980s, and even though a great deal was achieved in the first few decades since then, only in the past few years this technology has left the institutional labs and enjoyed popularity outside academia. Currently there are a number of projects led by commercial entities, some developed in collaboration with research centres, that are tackling the challenges on the road to large-scale quantum computing, and as a result several significant milestones on the roadmap were reached. Cambridge Quantum Computing was founded with the goal of commercialising quantum technologies and encouraging research in the field of quantum computing. We are developing the first ever quantum operating system, which has the goal of providing an interface between users and hardware. Our first commercial project aims to find applications of quantum algorithms in the financial services industry. Lastly, we are developing a proprietary protocol for the certified generation of true randomness. Further applications range from security to artificial intelligence, and there are dozens of areas where quantum-assisted computing could soon make a difference. Now that the advent of quantum computing is imminent, the community should continue thinking about the possible future applications of this technology, and how the academia and industries can work together towards the goal of building better and larger machines.

5. Mai 2017, 15:30 Uhr

Universität Stuttgart, NWZII, Raum 2.136
Pfaffenwaldring 57, 70569 Stuttgart