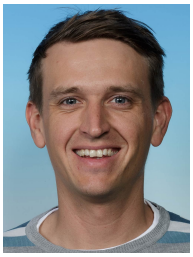

Alexander Erhard

Curriculum Vitæ

Education

2002–2007 **HTL (technical college), Industrial engineering, Business Information Science**, *HTL Dornbirn*, Austria.

2009–2012 **Bachelor of Science, Physics**, *University of Innsbruck*, Austria.

2012–2015 **Master of Science, Physics**, *University of Innsbruck*, Austria.

2015–2020 **Doctor of Philosophy, Physics**, *University of Innsbruck*, Austria.

Masters Thesis

Title *Frequency stabilization of a diode laser system with 729 nm wavelength*

Supervisor Univ.-Prof. Dr. Rainer Blatt

Doctoral Thesis

Title *Towards scalable quantum computation with trapped ions*

Supervisor Univ.-Prof. Dr. Rainer Blatt

Publications

A.Erhard, J.J.Wallman, L.Postler, M.Meth, R.Stricker, E.A.Martinez, P.Schindler, T.Monz, J.Emerson, R.Blatt *Characterizing large-scale quantum computers via cycle benchmarking.* Nature Comm. **10**, 5347 (2019)

A.Erhard, H.Poulsen-Nautrup, M.Meth, L.Postler, R.Stricker, M.Ringbauer, P.Schindler, H.J.Briegel, R.Blatt, N.Friis, T.Monz *Entangling logical qubits with lattice surgery.* arxiv:2006.03071 (2020)

E.A.Martinez, C.A.Muschik, P.Schindler, D.Nigg, **A.Erhard**, M.Heyl, P.Hauke, M.Dalmonte, T.Monz, P.Zoller, R.Blatt *Real-time dynamics of lattice gauge theories with a few-qubit quantum computer.* Nature **534**, 516–519 (2016)

L.Postler, Á.Rivas, P.Schindler, **A.Erhard**, R.Stricker, D.Nigg, T.Monz, R.Blatt, M.Müller *Experimental quantification of spatial correlations in quantum dynamics.* Quantum **2**, 90 (2018)

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C.Greganti, T.F.Demarie, M.Ringbauer, J.A.Jones, V.Saggio, I.A.Calafell, L.A.Rozema, **A.Erhard**, M.Meth, L.Postler, R.Stricker, P.Schindler, R.Blatt, T.Monz, P.Walther, J.F.Fitzsimons *Verification of independent quantum devices.* arXiv:1905.09790 (2020)

R.Stricker, D.Vodola, **A.Erhard**, L.Postler, M.Meth, M.Ringbauer, P.Schindler, T.Monz, M.Müller, R.Blatt *Deterministic correction of qubit loss.* arXiv:2002.09532 (2020)

Experience

Laboratory

2012–2015 **Master Student**, University of Innsbruck, Austria.
Building the optical and electrical setup to stabilize the frequency of a 729nm diode laser system.

2015–2020 **PhD Student**, University of Innsbruck, Austria.
Characterizing and improving a quantum computer based on trapped ions.

Vocational

2008–2009 **Software Developer**, OMICRON electronics GmbH, Austria.
Development of a management tool for electrical assets and its test data using the programming language C#.

2009–2012 **Software Developer (part time)**, OMICRON electronics GmbH, Austria.

Miscellaneous

2013–2014 **Tutor for Students**, University of Innsbruck, Austria.
Helped undergraduate students while doing their first lab courses.

2015–2016 **Teacher for Students**, University of Innsbruck, Austria.
Teaching courses on quantum and atom physics and advanced laboratory classes.

Computer skills

Operating systems	Windows, Linux
Programming languages	Python, C#, PHP
Office	Microsoft Office, LibreOffice
Mathematics	OriginPro, Mathematica
Documenting	LaTeX

Languages

German	**Mothertongue**
English	**Intermediate** (*Conversationally fluent*)

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