

Curriculum Vitae

Vedran Dunjko

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EDUCATION

PhD in Physics Heriot-Watt University, Edinburgh, UK. Supervisor: Prof. Dr. E. Andersson, Prof. Dr. G. S. Buller and Dr. E. Kashefi	2010 – 2012
Postgraduate studies in Mathematics University of Zagreb, Zagreb, Croatia	2007 – 2010
Undergraduate and Master studies in Mathematics and Computer Science University of Zagreb, Zagreb, Croatia	1999 – 2007 ¹

ACADEMIC DEGREES

PhD in Physics Heriot-Watt University, Edinburgh, UK	awarded 16 Nov 2012
Master in Mathematics and Computer Science University of Zagreb, Zagreb, Croatia (<i>Dipl. -Ing.</i> degree) Highest grade (5) achieved Final Exam and Graduation Dissertation	awarded 13 Sept 2007

EMPLOYMENT

Assistant Professor (tenure track), LIACS & LION, Leiden University Leiden, Netherlands	2018 – present
Post-doctoral position at Max Planck Institute of Quantum Optics Garching, Germany (AG Cirac)	2017 – 2018
Post-doctoral position at Institute for Theoretical Physics University of Innsbruck, Austria (AG Briegel)	2013 – 2017
Research associate at the School of Informatics, University of Edinburgh, UK	2012 – 2013
Research assistant at the Division of Molecular Biology Ruđer Bošković Institute, Zagreb, Croatia	2008 – 2015

¹My studies were protracted during the period of 1999-2008 as I had a second focus. I was a competing track and field athlete (multiple national finalist, 6-10 training sessions/week and co-coach for the horizontal and vertical jumps). In 2006 I also completed mandatory military service. My physics studies began in 2010.

FUNDING, FELLOWSHIPS, GRANTS

H2020 FETFLAG-05-2020 Part of Quantum Flagship EUR 4.7 Mil. Consortium, QML Workpackage Leader “Next Applications of Quantum Computing”	Sept 2020
EUR 150k funding toward PhD student <i>Google unrestricted gift</i> for research on “Quantum Machine Learning”	May 2020
Funding for post-doctoral researcher, 1 year Joint project with <i>SURFSara</i> “Quantum computing for Quantum Chemistry”	Jan 2020
Funding for two PhD students, 4 years External industrial funding from <i>Total</i>	Jul 2019
Funding for post-doctoral researcher, 1 year <i>Quantum Software Consortium</i> , internal call.	Jul 2018
Marie Currie Individual Fellowship (H2020-MSCA-IF-2017) Awarded project (2 years), declined for tenure-track position: “Quantum Machine and Reinforcement Learning”	Jan 2018
Humboldt Fellowship for Experienced Researchers Awarded project (1.5 years): “Quantum learning via interaction”	Dec 2017
EPSRC Doctoral Prize Fellowship 2012 Awarded project: “Hybrid quantum-classical secure cloud computing” Total funding estimate: \geq EUR 1200k	Nov 2012

OTHER PROJECTS AND CONSORTIA

Founding member of the <i>applied Quantum algorithms</i> group (Netherlands) (interdepartmental initiative in Leiden)	2019
Member of the <i>Quantum Software Consortium</i> (Netherlands) (consortium of 7 experimental and 7 theory physics groups)	2018
Co-author and associate member of the SFB <i>BeyondC</i> (Austria) (consortium of 7 experimental and 7 theory physics groups)	2018
Co-Principal Investigator of the SFB F40 (Austria) Foundations and Applications of Quantum Science (FoQuS) consortium, founded by the Austrian Science Fund (FWF)	2016

SUPERVISION

PostD: Mathys Rennela, Leiden 2019 – present
PhD: Charles Moussa, Leiden 2019 – present
PhD: Casper Gyurik, Leiden 2019 – present
PhD: Andrea Skolik, Leiden (external PhD) 2019 – present

Co-supervisor of:

PhD: Lea Trenkwalder, ITP, University of Innsbruck 2018 – present
PhD: Sofiene Jerbi ITP, University of Innsbruck 2019 – present
PhD: Yash Patel, Leiden 2020 – present
PostD: Eleanor Scerri, Leiden 2020 – present

Assisted in supervision (credited):

Davide Orsucci (PhD student, Innsbruck, finished 2019)
Alexander Pirkner (PhD student, Innsbruck, finished 2019)

MSc & BSc students: 1 current MSc, 7 MSc finished, 5 BSc finished, 1 BSc current

TEACHING

Leiden, LIACS & LION: Sept 2020
Complexity Theory, Quantum Algorithms,
Applied Quantum Algorithms

Leiden, LIACS & LION: Sept 2019
Foundations of Computer Science, Quantum Algorithms,
Applied Quantum Algorithms

Invited lecturer for the Sept 2016
Master class on Agency and Quantum Physics
University of Konstanz, Germany

Invited lecturer for the Jun 2016
Summer School on Quantum Information and Computation
University of Innsbruck, Austria

Course co-designed and taught: Apr – Jun 2016
“Quantum computing, control, and learning”
University of Innsbruck, Austria (6 ECTS points)

Course designed and taught: “An introduction to quantum computing” Apr 2012
at Institute of Computer Science, University of Tartu, Estonia
(Invited lecturer, 3 ECTS point course – 20 teaching hours)

ORGANIZATION

Co-organizer of “Quantum Machine Learning Plus” conference Sept 2018
Innsbruck, Austria

Co-organizer of the Agency and Quantum Physics (AQP) Sept 2016
International Conference, Konstanz, Germany

Co-organizer of the Agency and Quantum Physics (AQP) Mar/Apr 2015
International Workshop, Innsbruck, Austria

Assisted in organization: Quantum Information Scotland (QUISCO) 2011–2014
workshops (3–4 meetings per year), Edinburgh, UK

PATENTS

Filed patent application “Client-server communication system”
Application no.: PCT/GB2015/050306; Publication no.: WO2015121619 A3, Feb. 4th, 2015.
Co-inventors: Elham Kashefi, Theodoros Kapourniotis and Einar Pius.

PUBLICATIONS

41 published papers ($6 \times PRL$, $1 \times Nat. Comm.$, $1 \times PRX$, $1 \times PNAS$) 8 pre-prints/submitted. 3 papers with APS *Editor's suggestion* recognition, and one *Cozzarelli Prize* of the US National Academy of Sciences. In total, 49 papers, 1730 citations (1604 since 2014), h-index: 21, i10-index: 35^2 .

Google scholar page hyperlink:

<https://scholar.google.de/citations?hl=de&user=EQa5iCkAAAAJ&cstart=0&pagesize=20>

Full list of publications:

Published papers

- 1. On the convergence of projective-simulation-based reinforcement learning in Markov decision processes**
Jens Clausen, Walter L. Boyajian, Lea M. Trenkwalder, Vedran Dunjko, Hans J. Briegel
Quant. Mach. Int. (in press) 2020
- 2. A non-review of Quantum Machine Learning: trends and explorations** Vedran Dunjko, Peter Wittek *Quantum Views* 4, 32 2020
- 3. A hybrid algorithm framework for small quantum computers with application to finding Hamiltonian cycles** Y Ge, V Dunjko
J. Math. Phys. 61 (1), 012201
- 4. Skill Learning by Autonomous Robotic Playing Using Active Learning and Exploratory Behavior Composition**
Simon Hangl, Vedran Dunjko, Hans J. Briegel, Justus Piater
Front. Robot. AI, 03 April 2020
- 5. Optimizing quantum error correction codes with reinforcement learning** Hendrik Poulsen Nautrup, Nicolas Delfosse, Vedran Dunjko, Hans J. Briegel, Nicolai Friis
Quantum 3, 215 (2019)
- 6. Simple proof of confidentiality for private quantum channels in noisy environments**
Alexander Pirker, Michael Zwerger, Vedran Dunjko, Hans J. Briegel, Wolfgang Dür
Quant. Sci. Techn., 4, 2 (2019)
- 7. Speeding-up the decision making of a learning agent using an ion trap quantum processor**
Theeraphot Sriarunothai, Sabine Wölk, Gouri Shankar Giri, Nicolai Friis, Vedran Dunjko, Hans J. Briegel, Christof Wunderlich
Quant. Sci. Techn. 4, 015014 (2019)
- 8. Computational speedups using small quantum devices**
Vedran Dunjko, Yimin Ge and J. Ignacio Cirac
Phys. Rev. Lett. **121**, 250501(2018) (Editor's suggestion, Featured in *Physics*)
- 9. Neural Network Operations and Susuki-Trotter evolution of Neural Network States**
Nahuel Freitas, Giovanna Morigi, Vedran Dunjko
Int. J. Quantum Inf. **16**, 1840008 (2018).
- 10. Optimal sequential quantum mixing for slowly evolving sequences of Markov chains**
Davide Orsucci, Hans J. Briegel and Vedran Dunjko
Quantum **2**, 105 (2018).
- 11. Machine learning & artificial intelligence in the quantum domain: a review of recent progress**
Vedran Dunjko and Hans J. Briegel
Rep. Prog. Phys **81**, 074001 (2018).
- 12. Active learning machine learns to create new quantum experiments**
Alexey A. Melnikov, Hendrik Poulsen Nautrup, Mario Krenn, Vedran Dunjko, Markus Tiersch, Anton Zeilinger, Hans J. Briegel
Proc. Natl. Acad. Sci. **115** (6) pp. 1221-1226 (2018)) (PNAS Cozzarelli Prize)

²Source: Google scholar on Sept. 1st, 2020.

13. **Long-range big quantum-data transmission**
Michael Zwerger, Alexander Pirker, Vedran Dunjko, Wolfgang Dür, Hans J. Briegel
Phys. Rev. Lett. **120**, 030503 (2018)
14. **Advances in quantum reinforcement learning**
Vedran Dunjko, Jacob M. Taylor, Hans J. Briegel
IEEE SMC, Banff, AB, 2017, pp. 282-287.
doi: 10.1109/SMC.2017.8122616 (2017).
15. **Projective simulation with generalization**
Alexey A. Melnikov, Adi Makmal, Vedran Dunjko, Hans J. Briegel
Sci. Rep. **7**, 14430 (2017)
16. **Entanglement generation secure against general attacks**
Alexander Pirker, Vedran Dunjko, Wolfgang Dür, Hans J. Briegel
New J. Phys. **19**, 113012 (2017)
17. **Flexible resources for quantum metrology**
Nicolai Friis, Davide Orsucci, Michalis Skotiniotis,
Pavel Sekatski, Vedran Dunjko, Hans J. Briegel, Wolfgang Dür
New J. Phys.,**19**, 063044 (2017)
18. **Quantum-enhanced machine learning**
Vedran Dunjko, Jacob M. Taylor, Hans J. Briegel
Phys. Rev. Lett **117**, 130501 (2016)
19. **Meta-learning within Projective Simulation**
Adi Makmal, Alexey A. Melnikov, Vedran Dunjko, Hans J. Briegel
IEEE Access **4**, 2110 (2016)
20. **Enhanced delegated computing using coherence**
Stefanie Barz, Vedran Dunjko, Florian Schlederer, Merritt Moore, Elham Kashefi,
Ian A. Walmsley
Phys. Rev. A **93**, 032339 (2016)
21. **Quantum-enhanced Secure Delegated Classical Computing**
Vedran Dunjko, Theodoros Kapourniotis, Elham Kashefi
Quant. Inf. Comput. **16**, pp 61-86 (2016)
22. **Experimental demonstration of kilometer-range quantum digital signatures**
Ross J. Donaldson, Robert J. Collins, Klaudia Kleczkowska, Ryan Amiri, Petros Wallden,
Vedran Dunjko, John Jeffers, Erika Andersson, Gerald S. Buller
Phys. Rev. A **93**, 012329 (2016) (Editors' suggestion)
23. **Quantum mixing of Markov chains for special distributions**
Vedran Dunjko, Hans J. Briegel
New J. Phys. **17**, 073004 (2015)
24. **Quantum digital signatures with quantum-key-distribution components**
Petros Wallden, Vedran Dunjko, Adrian Kent, Erika Andersson
Phys. Rev. A **91**, 042304 (2015)
25. **Quantum-enhanced deliberation of learning agents in trapped ions**
Vedran Dunjko, Nicolai Friis, Hans J. Briegel
New J. Phys. **17**, 023006 (2015)
26. **Ground state blind quantum computation on AKLT state**
Tomoyuki Morimae, Vedran Dunjko, Elham Kashefi
Quantum Inf. Comput. **15**, 3&4, pp 200-234 (2015)
27. **Entanglement of π -locally-maximally-entangleable states and the satisfiability problem**
Adi Makmal, Markus Tiersch, Vedran Dunjko, Shengjun Wu
Phys. Rev. A **90**, 042308 (2014)
28. **Quantum speed-up for active learning agents**
Giuseppe Davide Paparo, Vedran Dunjko, Adi Makmal,
Miguel Angel Martin-Delgado, Hans J. Briegel
Phys. Rev. X **4**, 031002 (2014)
29. **Implementing quantum control for unknown subroutines**
Nicolai Friis, Vedran Dunjko, Wolfgang Dür., Hans J. Briegel
Phys. Rev A **89**, 030303(R) (2014)
30. **Optical realisation of Quantum Digital Signatures without quantum memory**
Robert J. Collins, Ross J. Donaldson, Vedran Dunjko, Petros Wallden,
Patrick J. Clarke, Erika Andersson, John Jeffers, Gerald S. Buller
Phys. Rev. Lett. **113**, 040502 (2014) (Editors' Suggestion; Featured in *Physics*)

31. **Minimum-cost quantum measurements for quantum information**
Petros Wallden, Vedran Dunjko, Erika Andersson
J. Phys. A **47** 125303 (2014)
32. **Quantum Digital Signatures without Quantum Memory**
Vedran Dunjko, Petros Wallden, Erika Andersson
Phys. Rev. Lett. **112** 040502 (2014)
33. **Composable security of delegated quantum computation**
Vedran Dunjko, Joseph F. Fitzsimons, Christopher Portmann, Renato Renner
Lecture Notes in Computer Science **8874** pp 406-425 (Asiacrypt 2014) (2014)
34. **Phylostratigraphic profiles reveal a deep evolutionary history of the vertebrate head sensory systems.**
Martin Sebastijan Šestak, Vedran Božičević, Robert Bakarić, Vedran Dunjko, Tomislav Domazet-Lošo
Front. Zool. **10**:18 (2013)
35. **Extended phase map decompositions for unitaries**
Vedran Dunjko, Elham Kashefi
Math. Structures Comput. Sci., 23, pp 360-385, (2013)
36. **Experimental demonstration of quantum digital signatures**
Patrick J. Clarke, Robert J. Collins, Vedran Dunjko, Erika Andersson, John Jeffers, Gerald S. Buller
Nat. Commun. 3:1174 (2012)
37. **Truly noiseless probabilistic amplification**
Vedran Dunjko, Erika Andersson
Phys. Rev. A **86** 042322 (2012)
38. **Transformations between symmetric sets of quantum states**
Vedran Dunjko, Erika Andersson
J. Phys. A **45** 365304 (2012)
39. **Universal blind quantum computing with weak coherent pulses**
Vedran Dunjko, Elham Kashefi, Anthony Leverrier
Phys. Rev. Lett. **108** 200502 (2012)
40. **Novel modifications of parallel Jacobi algorithms**
Sanja Singer, Saša Singer, Vedran Novaković, Aleksandar Ušćumlić, Vedran Dunjko
Numer. Algorithms **59** 1-27 (2012)
41. **Algebraic characterisation of one-way patterns**
Vedran Dunjko, Elham Kashefi
in *Proceedings Sixth Workshop on Developments in Computational Models: Causality, Computation, and Physics* **26** EPTCS, pp 85-100 (2010)

Submitted and preprints

42. **Quantum-accessible reinforcement learning beyond strictly epochal environments**
Arne Hamann, Vedran Dunjko, Sabine Wölk
preprint arXiv:2008.01481
43. **Hybrid divide-and-conquer approach for tree search algorithms**
Mathys Rennela, Alfons Laarman, Vedran Dunjko
preprint arXiv:2007.07040
44. **Towards quantum advantage for topological data analysis**
Casper Gyurik, Chris Cade, Vedran Dunjko
preprint: arXiv:2005.02607
45. **To quantum or not to quantum: towards algorithm selection in near-term quantum optimization**
Charles Moussa, Henri Calandra, *Vedran Dunjko*
preprint arXiv:2001.08271
46. **A framework for deep energy-based reinforcement learning with quantum speed-up** Sofiene Jerbi, Hendrik Poulsen Nautrup, Lea Trenkwalder, Hans J. Briegel, V Dunjko
preprint: arXiv:1910.12760 (2019)
47. **Blind quantum computing with two almost identical states**
Vedran Dunjko, Elham Kashefi
preprint: arXiv:1604.01586 (2016)
48. **Framework for learning agents in quantum environments**
Vedran Dunjko, Jacob M. Taylor, Hans J. Briegel
preprint: arXiv:1507.08482 (2015)

49. **On optimising quantum communication in verifiable quantum computing**
 Theodoros Kapourniotis, Vedran Dunjko, Elham Kashefi
preprint: arXiv:1506.06943 [presented at AQIS 2015] (2015)

CONFERENCES

(27 invited talks)

Invited

QTML 2020 , Virtual	(upcoming)
QNLP 2020 , Virtual	(upcoming)
QICF20 , Osaka, Japan	(upcoming)
Ellis QPhML 2020 , Virtual	May 2020
Invited lecture: "Toward quantum advantages for topological data analysis"	
Quantum Devices: Simulation, Supremacy, and Optimization , Berkely, US (Simons institute workshop)	May 2020
Invited lecture: "Divide-And-Conquer Hybrid Methods for Smaller Quantum Computers"	
Quantum Natural Language Processing Workshop , Oxford, UK	Dec 2019
Invited lecture: "A divide-and-conquer hybrid method for smaller quantum computers"	
ICFO Quantum Machine Learning Workshop , Barcelona, Spain	Oct 2019
Invited lecture: "Progress in quantum reinforcement learning"	
QuantumAlgo Consortium Workshop , Amsterdam, NL	Sept 2019
Invited lecture: "A divide-and-conquer hybrid method for smaller quantum computers"	
Workshop: QuHackEd , Edinburgh, UK	July 2019
Invited lecture: "From Quantum machine learning to Quantum AI"	
Workshop: Quantum Information and String Theory , Kyoto, Japan	June 2019
Invited lecture: "Machine learning and Quantum Information Processing: the match and the hype"	
Workshop: Dutch Research School of Theoretical Physics , Dalfsen, Netherlands	May 2019
Invited lecture: "Basics of quantum machine learning"	
55th Dutch Mathematical Congress , Veldhoven, Netherlands	April 2019
Invited talk: "Quantum computational speed-ups with small quantum computers"	
ESA Workshop: Quantum Processing of Big Data , Rome, Italy	April 2019
Invited talk: "From Quantum machine learning to Quantum AI"	
Quantum Techniques in Machine Learning , Durban, RSA	Nov 2018
Invited talk: "A route towards quantum-enhanced artificial intelligence"	
JQI Workshop on QML , Maryland, USA	Aug 2017
Invited talk: Aspects of quantum-enhanced artificial intelligence	
2nd Quantum UnConference , Barcelona, Spain	Apr 2018
QML and Biomimetic Quantum Technologies Workshop , Bilbao, Spain	Mar 2018
Artificial Intelligence and Quantum Physics Workshop , Nanjing, China	Dec 2017
Quantum Techniques in Machine Learning , Verona, Italy	Nov 2017
Invited talk: "(Advances in) Quantum Reinforcement Learning"	
Workshop on quantum CyberSecurity 2017 , Kent, UK	Jun 2017
Invited talk: "Composable security and blind delegated quantum computing with almost classical clients"	
Trustworthy Quantum Information Workshop (TYQI 2017) , Paris, France	Jun 2017
Invited talk: "Lego blocks of blind quantum computing"	
Workshop of Quantum Simulation and Quantum Walks , Prague, Czech Rep.	Nov 2016
Invited talk: "Quantum projective simulation, quantum walks and quantum machine learning"	
Agency and (quantum) physics Conference , Konstanz, Germany	Sept 2016
Invited talk: "Quantum artificial intelligence"	
3rd Seefeld workshop on Quantum Information , Seefeld, Austria	Jun 2016
Invited talk: "Quantum enhancements in agent-based learning"	

International Conference on Quantum Optics 2016 , Obergurgl, Austria Invited talk: “Quantum enhancements of learning agents”	Feb 2016
Quantum Randomness and Beyond , Barcelona, Spain Invited talk: “Quantum speed-up of active learning agents”	May 2015
(QUISCO) Classical and quantum security meeting , Edinburgh, UK Invited talk: “Composability of delegated quantum computation”	Dec 2012

Contributing

QIP 2018 , Delft, Netherlands Poster: “Exponential speed-ups for quantum reinforcement learning”	Jan 2017
IEEE SMC , Banff, Canada Talk: “Advances in quantum reinforcement learning”	Oct 2017
Quantum Machine Learning Meetings , KwaZulu-Natal, South Africa Talk: “Quantum-enhanced learning agents”	Jul 2016
European Symposium on Artificial Neural Networks , Bruges, Belgium Spotlight presentation and poster: “Quantum enhanced machine learning”	Apr 2016
SFB meeting , Innsbruck, Austria Talk: “Quantum speed-up of active learning agents”	Oct 2014
Gordon Research Conferences, Quantum Science: <i>Simulation, Verification and Control of Complex Quantum Many-Body Systems</i> , Easton, MA Poster: “Quantum speed-up of active learning agents”	Jul/Aug 2014
2nd Seefeld workshop on Quantum Information , Seefeld, Austria Poster: “Quantum-enhanced active learning agents”	Jun/Jul 2014
Quantum Fields, Gravity and Information , Nottingham, UK Poster: “Composable security of delegated quantum computation”	Apr 2013
Institute of Physics Meeting on Quantum Technologies , London, UK Talk: “Experimental demonstration of quantum digital signatures”	Dec 2012
11th International Conference on Quantum Communication, Measurement and Computing , Vienna, Austria Poster: “Universal blind quantum computing with weak coherent pulses” Poster: “Experimental demonstration of quantum digital signatures”	Jul/Aug 2012
8th Central European Quantum Information Processing workshop , Znojmo, Czech Rep. Talk: “Transformations between symmetric sets of quantum states”	Jun 2011
DCM, Federated Logic Conference workshop , Edinburgh Talk: “Algebraic characterization of one-way patterns”	Jul 2010
17th Central European Workshop on Quantum Optics , St. Andrews, UK Poster: “Algebraic characterization of one-way patterns” <u>V. Dunjko</u> , E. Kashefi	Jun 2010
12th Evolutionary Biology Meeting at Marseilles , Marseilles, France Poster and Talk: “Quest for the pervasive definition of homology: Insights from information theory and a mathematical model of sameness” <u>V. Dunjko</u> , T. Domazet-Lošo	Sept 2008

RESEARCH VISITS (with invited seminars)

1. *JRC of the European Commission*, Italy (Jan 2019)
2. *QuTech*, Netherlands (December 2018)
3. *CWI Amsterdam*, Netherlands (July 2018)
4. *University of Stuttgart*, Germany (May 2018)
5. *NUI Galway*, Ireland (Sept 2017)
6. *Universität des Saarlandes*, Germany (Apr & Jul 2017)

7. *Joint Quantum Institute*, MD, USA (Apr 2017)
8. *Technische Universität München*, Germany (Jul 2016)
9. *Max Planck Institute of Quantum Optics*, Garching, Germany (Mar 2016)
10. *Research Center for Quantum Information, Slovakian Academy of Sciences*, Bratislava, Slovakia (Apr 2015 & Jun 2011);
11. *Institute for Theoretical Physics*, ETH, Zürich, Switzerland (Oct 2014 & Jun 2012);
12. *Departamento de Física Teórica I*, Universidad Complutense, Madrid, Spain (Nov 2013);
13. *Institute for Quantum Optics and Quantum Information*, Austrian Academy of Sciences, Innsbruck, Austria (Jun 2012);
14. *The Centre for Quantum Information and Foundations*, University of Cambridge, UK (May 2012);
15. *Atomic, Molecular, Optical and Positron Physics group*, University College London, UK (May 2012);
16. *Quantum Correlations in Physics, Mathematics, and Computer Science group*, University of Freiburg, Germany (Apr 2012);
17. *Quantum Information LIVE at ICL*, Imperial College London, UK, (Apr 2012);
18. *Algorithms and Complexity Reading Group, School of Informatics*, University of Edinburgh, UK, (Nov 2011);
19. *Quantum Information group*, Telecom ParisTech, Paris, France, (Jan 2011);

MISCELLANEOUS

Editorial duties:	Editorial Board Member of PRX Quantum Associate Editor of Quantum Machine Intelligence (QUMI)
Referee for:	<u>Journals</u> : <i>Phys. Rev. Lett</i> , <i>Phys. Rev. X</i> , <i>Phys. Rev. A</i> , <i>Quant. Inf. Comp.</i> , <i>Quant. Inf. Proc.</i> , <i>Eur. Phys. J. D</i> , <i>New J. Phys.</i> , <i>Phys. Scripta</i> , <i>Int. J. Quant. Inf.</i> , <i>Photon. Res.</i> , <i>Sci. Rep.</i> , <i>IEEE Sec. & Priv.</i> , <i>Proc. R. Soc. A.</i> ; NPG QI; <i>Next Gen. Comput.</i> <u>Conferences</u> : <i>QIP</i> , <i>TQC</i> , <i>ESANN</i> , <i>IEEE SMC</i> , <i>IEEE ITW</i> , <i>CEQIP</i>
PC member:	<i>Quantum Interaction 2016</i> , <i>IEEE SMC special session 2017 (TPC)</i> , <i>CEQIP '17 & '19</i> , <i>QTML 2019</i>
PhD Defense committees:	3
Funding grant reviews:	2
Languages:	Croatian (native speaker), English (fluent), German (good - B2)
Computer skills:	Formal education and/or experienced in programming: C, C++, Java, Pascal, Fortran, Python, Mathematica, Perl, Matlab.
Activities:	Member of the Quantum Software Consortium, Netherlands (2018–present) Member of Quantum Information Scotland (QUISCO) (2011–present) Student representative at the Department of Mathematics, University of Zagreb, Zagreb, Croatia (2009–2010) Treasury for the Croatian Society for Theoretical and Mathematical Biology (2009–2010) Member of the Seminar for Numerical Mathematics and Computer Science, Department of Mathematics, University of Zagreb, Croatia Sports – Track and Field, former competitor in the disciplines: Long Jump, Triple Jump (multiple National Championship finalist)