# PUBLICATION LIST

Abuzer Yakaryılmaz

October 23, 2017

## 1 Peer-reviewed journal articles

0. *Submitted*: Aida Gainutdinova and Abuzer Yakaryılmaz. "Unary probabilistic and quantum automata on promise problems". In: *Quantum Information Processing* (2017)

0. *Submitted*: Marcos Villagra and Abuzer Yakaryılmaz. "Language recognition power and succintness of affine automata". In: *Natural Computing* (2017)

0. *Submitted*: Maksims Dimitrijevs and Abuzer Yakaryılmaz. "Uncountable realtime probabilistic classes". In: *RAIRO - Theoretical Informatics and Applications* (2017)

0. *Submitted*: Masaki Nakanishi, Abuzer Yakaryılmaz, and Aida Gainutdinova. "Classical and Quantum Counter Automata on Promise Problems". In: *Discrete Mathematics and Theoretical Computer Science* (2016). arXiv:1412.6761

0. *Submitted*: Ugur Küçük, A. C. Cem Say, and Abuzer Yakaryılmaz. "Inkdots as advice to small-space machines". In: *Discrete Mathematics and Theoretical Computer Science* (2015). arXiv:1509.03712

1. A. C. Cem Say and Abuzer Yakaryilmaz. "Magic coins are useful for small-space quantum machines". In: *Quantum Information & Computation* 17.11&12 (2017), pp. 1027–1043

2. Aleksandrs Belovs, Juan Andres Montoya, and Abuzer Yakaryılmaz. "On a conjecture by Christian Choffrut". In: *International Journal of Foundations of Computer Science* (2017). (Accepted)

3. Mika Hirvensalo and Abuzer Yakaryılmaz. "Decision problems on unary probabilistic and quantum automata". In: *Baltic Journal of Modern Computing* 4.4 (2016). arXiv:1610.01397, pp. 965–976

4. Abuzer Yakaryılmaz. "Quantum alternation". In: *Lobachevskii Journal of Mathematics* 37.6 (2016), pp. 637–649. DOI

5. Farid M. Ablayev, Aida Gainutdinova, Kamil Khadiev, and Abuzer Yakaryılmaz. "Very narrow quantum OBDDs and width hierarchies for classical OBDDs". In: *Lobachevskii Journal of Mathematics* 37.6 (2016), pp. 637–648. DOI

6. Abuzer Yakaryılmaz, A. C. Cem Say, and H. Gökalp Demirci. "Debates with small transparent quantum verifiers". In: *International Journal of Foundations of Computer Science* 27.2 (2016), pp. 283–300. DOI

7. Zuzana Bednárová, Viliam Geffert, Klaus Reinhardt, and Abuzer Yakaryılmaz. "New results on the minimum amount of space". In: *International Journal of Foundations of Computer Science* 27.2 (2016), pp. 259–281. DOI

8. Arseny Shur and Abuzer Yakaryılmaz. “More On Quantum, Stochastic, and Pseudo Stochastic Languages with Few States”. In: *Natural Computing* 15 (2016), pp. 129–141. LINK

9. Viliam Geffert and Abuzer Yakaryılmaz. “Classical Automata on Promise Problems”. In: *Discrete Mathematics & Theoretical Computer Science* 17.2 (2015), pp. 157–180. LINK

10. H. Gökalp Demirci, A. C. Cem Say, and Abuzer Yakaryılmaz. “The Complexity of Debate Checking”. In: *Theory Computing. Systems* 57.1 (2015), pp. 36–80. DOI

11. Ugur Küçük, A. C. Cem Say, and Abuzer Yakaryılmaz. “Finite Automata with Advice Tapes”. In: *International Journal of Foundations of Computer Science* 25.8 (2014), pp. 987–1000. DOI

12. A. C. Cem Say and Abuzer Yakaryılmaz. “Finite state verifiers with constant randomness”. In: *Logical Methods in Computer Science* 10.3 (2014). DOI

13. Abuzer Yakaryılmaz and A. C. Cem Say. “Proving the power of postselection”. In: *Fundamenta Informaticae* (2013), pp. 107–134. DOI

14. Abuzer Yakaryılmaz and A. C. Cem Say. “Tight Bounds for the Space Complexity of Nonregular Language Recognition by Real-Time Machines”. In: *International Journal of Foundations of Computer Science.* 24.8 (2013), pp. 1243–1254. DOI

15. Andris Ambainis and Abuzer Yakaryılmaz. “Superiority of exact quantum automata for promise problems”. In: *Information Processing Letters* 112.7 (2012), pp. 289–291. DOI

16. Abuzer Yakaryılmaz, Rūsiņš Freivalds, A. C. Cem Say, and Ruben Agadzanyan. “Quantum Computation with write-only memory”. In: *Natural Computing* 11.1 (2012), pp. 81–94. DOI

17. Abuzer Yakaryılmaz. “Superiority of one-way and realtime quantum machines”. In: *Theoretical Informatics and Applications* 46.4 (2012), pp. 615–641. DOI

18. A. C. Cem Say and Abuzer Yakaryılmaz. “Quantum counter automata”. In: *International Journal of Foundations of Computer Science* 23.5 (2012), pp. 1099–1116. DOI

19. A. C. Cem Say and Abuzer Yakaryılmaz. “Computation with multiple CTCs of fixed length and width”. In: *Natural Computing* 11.4 (2012), pp. 579–594. DOI

20. Abuzer Yakaryılmaz and A. C. Cem Say. “Unbounded-error Quantum Computation with Small Space Bounds”. In: *Information and Computation* 279.6 (2011), pp. 873–892. DOI

21. Abuzer Yakaryılmaz and A. C. Cem Say. “Languages recognized by nondeterministic quantum finite automata”. In: *Quantum Information and Computation* 10.9&10 (2010), pp. 747–770. LINK

22. Abuzer Yakaryılmaz and A. C. Cem Say. “Succinctness of two-way probabilistic and quantum finite automata”. In: *Discrete Mathematics and Theoretical Computer Science* 12.4 (2010), pp. 19–40. LINK

23. Rūsiņš Freivalds, Abuzer Yakaryılmaz, and A. C. Cem Say. “A new family of nonstochastic languages”. In: *Information Processing Letters* 110.10 (2010), pp. 410–413. DOI

24. Abuzer Yakaryılmaz and A. C. Cem Say. “Efficient probability amplification in two-way quantum finite automata”. In: *Theoretical Computer Science* 410.20 (2009), pp. 1932–1941. DOI

## 2 Peer-reviewed conference articles

1. Masaki Nakanishi, Kamil Khadiev, Krisjanis Prusis, Jevgenijs Vihrovs, and Abuzer Yakaryı lmaz. "Exact affine counter automata". In: *Automata and Formal Languages*. EPTCS. 2017

2. Aida Gainutdinova and Abuzer Yakaryılmaz. "Nondeterministic unitary OBDDs". In: *Computer Science - Theory and Applications*. Vol. 10304. LNCS. Springer, 2017, pp. 126–140

3. Maksims Dimitrijevs and Abuzer Yakaryılmaz. "Uncountable realtime probabilistic classes". In: *Descriptional Complexity of Formal Systems*. Vol. 10316. LNCS. Springer, 2017, pp. 102–113

4. Mika Hirvensalo, Etienne Moutot, and Abuzer Yakaryılmaz. "On the computational power of affine automata". In: *Language and Automata Theory and Applications*. Vol. 10168. LNCS. Springer, 2017, pp. 405–417

5. Maksims Dimitrijevs and Abuzer Yakaryılmaz. "Uncountable Classical and Quantum Complexity Classes". In: *Eigth Workshop on Non-Classical Models for Automata and Applications (NCMA2016)*. Vol. 321. books@ocg.at. Austrian Computer Society, 2016, pp. 131–146. arXiv:1608.00417

6. Kaspars Balodis, Maksims Dimitrijevs, and Abuzer Yakaryılmaz. "Two-Way Frequency Finite Automata". In: *Eigth Workshop on Non-Classical Models for Automata and Applications (NCMA2016)*. Vol. 321. books@ocg.at. Austrian Computer Society, 2016, pp. 75–88

7. Aleksandrs Belovs, Juan Andres Montoya, and Abuzer Yakaryılmaz. "Looking for the pairs that are hard to separate: A quantum approach". In: *Implementation and Application of Automata*. Vol. 9705. LNCS. Springer, 2016, pp. 213–223. arXiv:1602.07967

8. Marcos Villagra and Abuzer Yakaryılmaz. "Language recognition power and succintness of affine automata". In: *Unconventional Computation and Natural Computation*. Vol. 9726. LNCS. Springer, 2016, pp. 116–129. arXiv:1602.05432

9. Alejandro Díaz-Caro and Abuzer Yakaryılmaz. "Affine computation and affine automaton". In: *Computer Science - Theory and Applications (CSR2016)*. Vol. 9691. LNCS. Springer, 2016, pp. 1–15. arXiv:1602.04732

10. Aida Gainutdinova and Abuzer Yakaryılmaz. "Unary probabilistic and quantum automata on promise problems". In: *Developments in Language Theory*. Vol. 9168. LNCC. Springer, 2015, pp. 252–263. DOI

11. Masaki Nakanishi and Abuzer Yakaryılmaz. "Classical and Quantum Counter Automata on Promise Problems". In: *Implementation and Application of Automata*. Vol. 9223. LNCC. Springer, 2015, pp. 224–237. DOI

12. Abuzer Yakaryılmaz and J. Andres Montoya. "On discerning strings with finite automata". In: *2015 Latin American Computing Conference*. IEEE, 2015, pp. 1–5. DOI

13. Viliam Geffert and Abuzer Yakaryılmaz. "Classical automata on promise problems". In: *Descriptional Complexity of Formal Systems*. Vol. 8614. LNCS. Springer, 2014, pp. 126–137. DOI

14. Farid M. Ablayev, Aida Gainutdinova, Kamil Khadiev, and Abuzer Yakaryılmaz. "Very Narrow Quantum OBDDs and Width Hierarchies for Classical OBDDs". In: *Descriptional Complexity of Formal Systems*. Vol. 8614. LNCS. Springer, 2014, pp. 53–64. DOI

15. H. Gökalp Demirci, Mika Hirvensalo, Klaus Reinhardt, A. C. Cem Say, and Abuzer Yakaryılmaz. "Classical and quantum realtime alternating automata". In: *Sixth Workshop on Non-Classical Models for Automata and Applications (NCMA2014)*. Vol. 282. books@ocg.at. Austrian Computer Society, 2014, pp. 101–114. arXiv:1407.0334

16. Jibran Rashid and Abuzer Yakaryılmaz. "Implications of quantum automata for contextuality". In: *Implementation and Application of Automata*. Vol. 8587. LNCS. Springer, 2014, pp. 318–331. DOI

17. Marzio De Biasi and Abuzer Yakaryılmaz. "Unary Languages Recognized by Two-Way One-Counter Automata". In: *Implementation and Application of Automata*. Vol. 8587. LNCS. Springer, 2014, pp. 148–161. DOI

18. Arseny M. Shur and Abuzer Yakaryılmaz. "Quantum, Stochastic, and Pseudo Stochastic Languages with Few States". In: *Unconventional Computation and Natural Computation*. Vol. 8553. LNCS. Springer, 2014, pp. 327–339. DOI

19. A. C. Cem Say, Abuzer Yakaryılmaz, and H. Gökalp Demirci. "Debates with small transparent quantum verifiers". In: *Developments in Language Theory*. Vol. 8633. LNCS. Springer, 2014, pp. 327–338. DOI

20. Klaus Reinhardt and Abuzer Yakaryılmaz. "The Minimum Amount of Useful Space: New Results and New Directions". In: *Developments in Language Theory*. Vol. 8633. LNCS. Springer, 2014, pp. 315–326. DOI

21. Abuzer Yakaryılmaz. "Quantum Alternation". In: *Computer Science - Theory and Applications*. Vol. 7913. LNCS. Springer, 2013, pp. 334–346. DOI

22. Abuzer Yakaryılmaz. "One-Counter Verifiers for Decidable Languages". In: *Computer Science - Theory and Applications*. Vol. 7913. LNCS. Springer, 2013, pp. 366–377. DOI

23. Abuzer Yakaryılmaz. "Public qubits versus private coins". In: *The Proceedings of Workshop on Quantum and Classical Complexity*. University of Latvia Press, 2013, pp. 45–60. LINK

24. Ugur Küçük, A. C. Cem Say, and Abuzer Yakaryılmaz. "Finite Automata with Advice Tapes". In: *Developments in Language Theory*. Vol. 7907. LNCS. Springer, 2013, pp. 301–312. DOI

25. Özlem Salehi, Abuzer Yakaryılmaz, and A. C. Cem Say. "Real-Time Vector Automata". In: *Fundamentals of Computation Theory*. Vol. 8070. LNCS. Springer, 2013, pp. 293–304. DOI

26. A. C. Cem Say and Abuzer Yakaryılmaz. "Finite State Verifiers with Constant Randomness". In: *How the World Computes – Turing Centenary Conference and 8th Conference on Computability in Europe*. Vol. 7318. LNCS. 2012, pp. 646–654. DOI

27. A. C. Cem Say and Abuzer Yakaryılmaz. "Computation with narrow CTCs". In: *Unconventional Computation*. Vol. 6714. LNCS. 2011, pp. 201–211. DOI

28. Abuzer Yakaryılmaz. "Superiority of one-way and realtime quantum machines and new directions". In: *Third Workshop on Non-Classical Models for Automata and Applications (NCMA2011)*. 2011, pp. 209–224. arXiv:1102.3093

29. Abuzer Yakaryılmaz, Rūsiņš Freivalds, A. C. Cem Say, and Ruben Agadzanyan. "Quantum Computation with Devices Whose Contents Are Never Read". In: *Unconventional Computation*. Vol. 6079. LNCS. 2010, pp. 164–174. DOI

30. Abuzer Yakaryılmaz and A. C. Cem Say. "Languages Recognized with Unbounded Error by Quantum Finite Automata". In: *Computer Science – Theory and Applications*. Vol. 5675. LNCS. Springer, 2009, pp. 356–367. DOI

## 3 Chapters

1. Andris Ambainis and Abuzer Yakaryılmaz. "Automata: From Mathematics to Applications". In: ed. by Jean Éric Pin. (To appear). Chap. Automata and quantum computing. arXiv:1507.01988

2. A. C. Cem Say and Abuzer Yakaryılmaz. "Quantum Finite Automata: A Modern Introduction". In: *Gruska Festschrift*. Vol. 8808. LNCS. Springer International Publishing, 2014, pp. 208–222. DOI

## 4 Scientific books

1. Mika Hirvensalo and Abuzer Yakaryılmaz, eds. *Proceedings of the Workshop on Quantum and Classical Complexity*. Latvian University Press, 2013. LINK

## 5 Technical reports and workshops

1. Rishat Ibrahimov, Kamil Khadiev, and Abuzer Yakaryılmaz. *Exact Affine OBDDs*. Tech. rep. 1703.07184. arXiv, 2017

2. Abuzer Yakaryılmaz and A. C. Cem Say. *Probabilistic and quantum finite automata with postselection*. Tech. rep. arXiv:1102.0666. (A preliminary version of this paper appeared in the Proceedings of Randomized and Quantum Computation (satellite workshop of MFCS and CSL 2010), pages 14-24, 2010.) 2011

3. Abuzer Yakaryılmaz and A. C. Cem Say. *NP has log-space verifiers with fixed-size public quantum registers*. Tech. rep. arXiv:1101.5227. 2011

4. A. C. Cem Say, Abuzer Yakaryılmaz, and Şefika Yüzsever. "Quantum One-Way One-Counter Automata". In: *Randomized and Quantum Computation*. Ed. by Rūsiņš Freivalds. (Satellite workshop of MFCS and CSL 2010). 2010, pp. 25–34

5. A. C. Cem Say and Abuzer Yakaryılmaz. *Quantum Function Computation Using Sublogarithmic Space*. Tech. rep. arXiv:1009.3124. 2010. (Poster presentation at QIP2010)

6. Abuzer Yakaryılmaz and A. C. Cem Say. *Language Recognition by Generalized Quantum Finite Automata with Unbounded Error*. Tech. rep. arXiv:0901.2703v1. 2009. (Poster presentation at TQC2009)

## 6 Theses

1. Abuzer Yakaryılmaz. "Classical and Quantum Computation with Small Space Bounds". PhD thesis. Boğaziçi University, 2011. arXiv:1102.0378

2. Abuzer Yakaryılmaz. “Efficient Two-Way Quantum Finite State Automata”. MS thesis. Boğaziçi University, 2007. LINK