

Yavuz Koroglu, Ph.D.

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🌐 <https://ykoroglu.wordpress.com>



Employment History

- 2022 – **Postdoctoral Researcher**, CD-Laboratory QAMCAS, Institute of Software Technology, Graz University of Technology, Graz / AUSTRIA.
- Summer 2023 **Project Consultant** srcML, LLC., Ohio / USA.
- 2020 – 2022 **Project Manager** Trailblu Inc., Teknopark, Bogazici University, Istanbul / TURKEY.
- 2019 – 2020 **Research Assistant** Department of Computer Engineering, Bogazici University, Istanbul / TURKEY.
- 2018 – 2019 **Researcher** Institute of Software Technology, Graz University of Technology, Graz / AUSTRIA.
- 2014 – 2018 **Teaching Assistant** Department of Computer Engineering, Bogazici University, Istanbul / TURKEY.

Education

- 2016 – 2022 **Ph.D. Computer Engineering, Bogazici University.**
Thesis title: *Using Machine Learning to Improve Automated Test Generation.*
- 2014 – 2016 **M.Sc. Computer Engineering, Bogazici University.**
Thesis title: *Heuristics for Concolic Software Testing.*
- 2009 – 2014 **B.Sc. Computer Engineering, Bogazici University.**
Thesis title: *Data Race Detection in MultizSim.*







Research Publications

Journal Articles






- 1 **Y. Koroglu** and A. Sen, “Fast witness generation for readable gui test scenarios via generalized experience replay,” *IEEE Access*, vol. 10, pp. 116 224–116 240, 2022. [DOI: 10.1109/ACCESS.2022.3218902](https://doi.org/10.1109/ACCESS.2022.3218902).
- 2 **Y. Koroglu** and A. Sen, “Functional test generation from ui test scenarios using reinforcement learning for android applications,” *Software Testing, Verification and Reliability*, vol. 31, no. 3, e1752, 2021. [DOI: 10.1002/stvr.1752](https://doi.org/10.1002/stvr.1752).
- 3 M. Efendioglu, A. Sen, and **Y. Koroglu**, “Bug prediction of systemc models using machine learning,” *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol. 38, no. 3, pp. 419–429, 2019. [DOI: 10.1109/TCAD.2018.2878193](https://doi.org/10.1109/TCAD.2018.2878193).
- 4 **Y. Koroglu** and A. Sen, “Reinforcement learning-driven test generation for android GUI applications using formal specifications,” *CoRR*, vol. abs/1911.05403, 2019. arXiv: 1911.05403.

Conference Proceedings



- 1 **Y. Koroglu** and F. Wotawa, “Bottleneck analysis via grammar-based performance fuzzing*,” in *2023 IEEE International Conference on Software Testing, Verification and Validation Workshops (ICSTW)*, 2023, pp. 180–185. [DOI: 10.1109/ICSTW58534.2023.00041](https://doi.org/10.1109/ICSTW58534.2023.00041).

- 2 **Y. Koroglu** and F. Wotawa, “Continuous domain input abstraction and fault detection capability in combinatorial testing,” in *2023 38th IEEE/ACM International Conference on Automated Software Engineering Workshops (ASEW)*, 2023, pp. 167–170.  DOI: 10.1109/ASEW60602.2023.00027.
- 3 **Y. Koroglu** and F. Wotawa, “Towards a review on simulated adas/ad testing,” in *2023 IEEE/ACM International Conference on Automation of Software Test (AST)*, 2023, pp. 112–122.  DOI: 10.1109/AST58925.2023.00015.
- 4 **Y. Koroglu** and F. Wotawa, “Fully automated compiler testing of a reasoning engine via mutated grammar fuzzing,” in *2019 IEEE/ACM 14th International Workshop on Automation of Software Test (AST)*, 2019, pp. 28–34.  DOI: 10.1109/AST.2019.00010.
- 5 **Y. Koroglu** and A. Sen, “Tcm: Test case mutation to improve crash detection in android,” in *Fundamental Approaches to Software Engineering*, A. Russo and A. Schürr, Eds., Cham: Springer International Publishing, 2018, pp. 264–280, ISBN: 978-3-319-89363-1.
- 6 **Y. Koroglu**, A. Sen, O. Muslu, *et al.*, “Qbe: Qlearning-based exploration of android applications,” in *2018 IEEE 11th International Conference on Software Testing, Verification and Validation (ICST)*, 2018, pp. 105–115.  DOI: 10.1109/ICST.2018.00020.
- 7 **Y. Koroglu** and A. Sen, “Design of a modified concolic testing algorithm with smaller constraints,” in *Proceedings of the 7th Workshop on Constraint Solvers in Testing, Verification, and Analysis co-located with The International Symposium on Software Testing and Analysis (ISSTA 2016), Saarbrücken, Germany, July 17th, 2016*, 2016, pp. 3–14.  URL: <http://ceur-ws.org/Vol-1639/paper-03.pdf>.
- 8 **Y. Koroglu**, A. Sen, D. Kutluay, *et al.*, “Defect prediction on a legacy industrial software: A case study on software with few defects,” in *Proceedings of the 4th International Workshop on Conducting Empirical Studies in Industry*, ser. CESI ’16, Austin, Texas: ACM, 2016, pp. 14–20, ISBN: 978-1-4503-4154-7.  DOI: 10.1145/2896839.2896843.

National Conferences





- 1 A. Gul, **Y. Koroglu**, and A. Sen, *Machine learning based bug prediction engine for smart contracts*, Turkish National Software Engineering Symposium (UYMS), 2020.  DOI: 10.1109/UYMS50627.2020.9247056.
- 2 **Y. Koroglu**, A. Sen, and A. Akin, *Automated functional test generation practice for a large-scale android application*, Turkish National Software Engineering Symposium (UYMS), 2020.  DOI: 10.1109/UYMS50627.2020.9247060.
- 3 **Y. Koroglu** and A. Sen, *Bad behaving test generation for android applications*, Proceedings of the 12th Turkish National Software Engineering Symposium, Sabanci University, Istanbul, Turkey, September 10–12, 2018. 2018.  URL: http://ceur-ws.org/Vol-2201/UYMS_2018_paper_61.pdf.
- 4 **Y. Koroglu**, M. Efendioglu, and A. Sen, *Combining model-based and random approaches to improve crash detection in android*, 2017.  URL: http://ceur-ws.org/Vol-1980/YTM_2017_paper_2.pdf.
- 5 **Y. Koroglu** and A. Sen, *Concolic test with incremental partial path constraints*, Proceedings of the 9th Turkish National Software Engineering Symposium, Yasar University, Izmir, Turkey, September, 9–11, 2015.  URL: http://ceur-ws.org/Vol-1483/1_Bildiriri.pdf.

Skills



- Languages  Strong reading, writing and speaking competencies for English.
- Coding  C, Perl, Python, R, MATLAB, \LaTeX , ...

Miscellaneous Experience




Awards and Achievements

- 2023  **Thesis Award**, Bogazici University Scientific Research Projects Award for Ph.D. Thesis.
- 2019  **Best Paper Award**, 14th IEEE/ACM International Workshop on Automation of Software Test.
- 2018  **Best Paper Award**, Turkish National Software Engineering Symposium.
- 2015  **Outstanding Achievement Award**, Turkish National Software Engineering Symposium.

Certification

- 2016  **Participation**. International Summer School of Marktoberdorf
- 2023  **Participation**. Management of (Research) Projects @ TU Graz


TA Courses

- 2014-2018  Digital Design
-  Computer Organization
- 2013-2014  Introduction to Computing (in both C and Java, voluntary work)

References


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