

Aleksandr Popov

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WORK EXPERIENCE

PhD: Algorithms for Uncertain Trajectories, TU/e October 2019–October 2023
In this project, carried out under supervision of prof. dr. Kevin Buchin, I developed practical algorithms and obtained new theoretical results for analysis of trajectories under different uncertainty models.

Internship in Deep Learning, Achmea November 2018–April 2019
In this project I designed and implemented deep learning models for object detection in the context of locating damaged parts of glasshouses after a hailstorm.

EDUCATION

Master of Science September 2017–September 2019
Computer Science and Engineering at TU Eindhoven
Eindhoven, The Netherlands
Major: Data Science in Engineering
GPA: 8.17 (Dutch scale, 1–10), cum laude

Bachelor of Science September 2014–August 2017
Computer Science and Engineering at TU Eindhoven
Eindhoven, The Netherlands
Major: Software Science
GPA: 9.15 (Dutch scale, 1–10), cum laude

Bachelor of Science September 2012–June 2014
Information Security at ITMO University
Saint Petersburg, Russia
Studied for two years out of four, no diploma
GPA: 5.00 (Russian scale, 1–5), ranking in the group: 1 out of 90 students

General Secondary Education September 2001–June 2012
Private Educational Institution ‘Saint Petersburg Gymnasium “Alma-Mater” ’
Saint Petersburg, Russia
Graduated with gold medal (honours) for exceptional academic performance
GPA: 5.00 (Russian scale, 1–5)

PUBLICATIONS

- [1] Milutin Brankovic, Kevin Buchin, Koen Klaren, André Nusser, Aleksandr Popov and Sampson Wong. ‘ (k, ℓ) -Medians Clustering of Trajectories Using Continuous Dynamic Time Warping’. In: *Proceedings of the 28th International Conference on Advances in Geographic Information Systems (SIGSPATIAL 2020)*. Ed. by Chang-Tien Lu, Fusheng Wang, Goce Trajcevski, Yan Huang, Shawn Newsam and Li Xiong. New York, NY, USA: Association for Computing Machinery, 2020, pp. 99–110. ISBN: 978-1-4503-8019-5. DOI: [10.1145/3397536.3422245](https://doi.org/10.1145/3397536.3422245).
- [2] Kevin Buchin, Maike Buchin, Joachim Gudmundsson, Aleksandr Popov and Sampson Wong. *Map-Matching Queries under Fréchet Distance on Low-Density Spanners*. Presented at EuroCG 2023, Barcelona, Spain. 2023. URL: https://dccg.upc.edu/eurocg23/wp-content/uploads/2023/05/Booklet_EuroCG2023.pdf (visited on 05/10/2023).
- [3] Kevin Buchin, Bram Custers, Ivor van der Hoog, Maarten Löffler, Aleksandr Popov, Marcel Roeloffzen and Frank Staals. ‘Segment Visibility Counting Queries in Polygons’. In: *Proceedings of the 33rd International Symposium on Algorithms and Computation (ISAAC 2022)*. Ed. by Sang Won Bae and Heejin Park. Leibniz International Proceedings in Informatics 248. Wadern, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2022, 58. ISBN: 978-3-95977-258-7. DOI: [10.4230/LIPIcs.ISAAC.2022.58](https://doi.org/10.4230/LIPIcs.ISAAC.2022.58).
- [4] Kevin Buchin, Bram Custers, Ivor van der Hoog, Maarten Löffler, Aleksandr Popov, Marcel Roeloffzen and Frank Staals. *Segment Visibility Counting Queries in Polygons*. Presented at EuroCG 2022, Perugia, Italy. 2022. URL: <https://eurocg2022.unipg.it/booklet/EuroCG2022-Booklet.pdf> (visited on 05/10/2023).
- [5] Kevin Buchin, Chenglin Fan, Maarten Löffler, Aleksandr Popov, Benjamin Raichel and Marcel Roeloffzen. ‘Fréchet Distance for Uncertain Curves’. In: *Proceedings of the 47th International Colloquium on Automata, Languages, and Programming (ICALP 2020)*. Ed. by Artur Czumaj, Anuj Dawar and Emanuela Merelli. Leibniz International Proceedings in Informatics 168. Wadern, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2020, 20. ISBN: 978-3-95977-138-2. DOI: [10.4230/LIPIcs.ICALP.2020.20](https://doi.org/10.4230/LIPIcs.ICALP.2020.20).
- [6] Kevin Buchin, Chenglin Fan, Maarten Löffler, Aleksandr Popov, Benjamin Raichel and Marcel Roeloffzen. ‘Fréchet Distance for Uncertain Curves’. In: *ACM Transactions on Algorithms* 19.3, 29 (2023). ISSN: 1549-6325. DOI: [10.1145/3597640](https://doi.org/10.1145/3597640).
- [7] Kevin Buchin, Joachim Gudmundsson, Antonia Kalb, Aleksandr Popov, Carolin Rehs, André van Renssen and Sampson Wong. ‘Oriented Spanners’. In: *Proceedings of the 31st Annual European Symposium on Algorithms (ESA 2023)*. Ed. by Inge Li Gørtz, Martin Farach-Colton, Simon J. Puglisi and Grzegorz Herman. Leibniz International Proceedings in Informatics 274.

- Wadern, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2023, 26. ISBN: 978-3-95977-295-2. DOI: [10.4230/LIPIcs.ESA.2023.26](https://doi.org/10.4230/LIPIcs.ESA.2023.26).
- [8] Kevin Buchin, Joachim Gudmundsson, Antonia Kalb, Aleksandr Popov, Carolin Rehs, André van Renssen and Sampson Wong. *Oriented Spanners*. Presented at EuroCG 2023, Barcelona, Spain. 2023. URL: https://dccg.upc.edu/eurocg23/wp-content/uploads/2023/05/Booklet_EuroCG2023.pdf (visited on 05/10/2023).
- [9] Kevin Buchin, Maarten Löffler, Tim Ophelders, Aleksandr Popov, Jérôme Urhausen and Kevin Verbeek. ‘Computing the Fréchet Distance between Uncertain Curves in One Dimension’. In: *Proceedings of the 17th International Symposium on Algorithms and Data Structures (WADS 2021)*. Ed. by Anna Lubiw, Mohammad Salavatipour and Meng He. Lecture Notes in Computer Science 12808. Berlin, Germany: Springer, 2021, pp. 243–257. ISBN: 978-3-030-83507-1. DOI: [10.1007/978-3-030-83508-8_18](https://doi.org/10.1007/978-3-030-83508-8_18).
- [10] Kevin Buchin, Maarten Löffler, Tim Ophelders, Aleksandr Popov, Jérôme Urhausen and Kevin Verbeek. ‘Computing the Fréchet Distance between Uncertain Curves in One Dimension’. In: *Computational Geometry. Theory & Applications* 109, 101923 (2023). ISSN: 0925-7721. DOI: [10.1016/j.comgeo.2022.101923](https://doi.org/10.1016/j.comgeo.2022.101923).
- [11] Kevin Buchin, Maarten Löffler, Aleksandr Popov and Marcel Roeloffzen. *Fréchet Distance Between Uncertain Trajectories. Computing Expected Value and Upper Bound*. Presented at EuroCG 2020, Würzburg, Germany. 2020. URL: <https://www1.pub.informatik.uni-wuerzburg.de/eurocg2020/data/uploads/eurocg20-proceedings.pdf> (visited on 05/10/2023).
- [12] Kevin Buchin, Maarten Löffler, Aleksandr Popov and Marcel Roeloffzen. ‘Uncertain Curve Simplification’. In: *Proceedings of the 46th International Symposium on Mathematical Foundations of Computer Science (MFCS 2021)*. Ed. by Filippo Bonchi and Simon J. Puglisi. Leibniz International Proceedings in Informatics 202. Wadern, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2021, 26. ISBN: 978-3-95977-201-3. DOI: [10.4230/LIPIcs.MFCS.2021.26](https://doi.org/10.4230/LIPIcs.MFCS.2021.26).
- [13] Kevin Buchin, Maarten Löffler, Aleksandr Popov and Marcel Roeloffzen. *Uncertain Curve Simplification*. Presented at EuroCG 2021, Saint Petersburg, Russia. 2021. URL: <http://eurocg21.spbu.ru/wp-content/uploads/2021/04/proceedings.pdf> (visited on 05/10/2023).