

Dr. Edon Kelmendi

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Birth place: Prishtinë, Kosovë
Birth date: 20 May 1989
Nationality: Kosovar
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Queen Mary,
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Peter Landin Building
10 Godward Square
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United Kingdom

Professional Appointments

- 2023 – now **Lecturer**
School of Electronic Engineering and Computer Science
Queen Mary, University of London
- 2021 – 2023 **Research Associate**
Max Planck Institute for Software Systems
Advised by: Joël Ouaknine and James Worrell
- 2019 – 2021 **Research Associate**
University of Oxford
Advised by: Joël Ouaknine and James Worrell
- 2018 – 2019 **Research Associate**
University of Warsaw
Advised by: Mikołaj Bojańczyk
- 2017 – 2018 **Research Associate**
Technical University of Munich
Advised by: Anca Muscholl and Jan Křetínský

Education





- 2013 – 2016 **Doctorate**, LaBRI, Université de Bordeaux, France
Thesis title: Two-Player Stochastic Games with Perfect and Zero Information
Advisors: Hugo Gimbert and François Dufour
- 2011 – 2013 **Masters**, Université de Bordeaux, France
Thesis title: Value 1 Problem for Probabilistic Automata
Advisor: Hugo Gimbert
Mention: Très bien
- 2007 – 2010 **BEng**, Informatics, Universiteti i Prishtinës, Republic of Kosovo

Interests

I am broadly interested in theoretical computer science, with a focus on algorithmic verification, logics, automata, games, and dynamical systems.






Publications

Journal Articles

- 2023 Hugo Gimbert, Edon Kelmendi. Submixing and Shift-Invariant Stochastic Games. *International Journal of Game Theory (IJGT)*; to appear. 
- 2022 Julia Eisentraut, Edon Kelmendi, Jan Křetínský, Maximilian Weininger. Value Iteration for Simple Stochastic Games: Stopping Criterion and Learning. *Information and Computation*, Volume 285, Part B, 104886 (**Inf. Comput.** 285) doi:[10.1016/j.ic.2022.104886](https://doi.org/10.1016/j.ic.2022.104886) 
- Toghrul Karimov, Edon Kelmendi, Joël Ouaknine, James Worrell. What's Decidable About Discrete Linear Dynamical Systems? In: Raskin, JF., Chatterjee, K., Doyen, L., Majumdar, R. (eds) **Principles of Systems Design**. *Lecture Notes in Computer Science*, vol 13660. Springer, Cham. doi:[10.1007/978-3-031-22337-2_2](https://doi.org/10.1007/978-3-031-22337-2_2) 
- 2015 Nathanaël Fijalkow, Hugo Gimbert, Edon Kelmendi, Youssouf Oualhadj. Deciding the Value 1 Problem for Probabilistic Leaktight Automata. *Logical Methods in Computer Science (LMCS)* Volume 11, Issue 2 doi:[10.2168/LMCS-11\(2:12\)2015](https://doi.org/10.2168/LMCS-11(2:12)2015) 

Conference Proceedings

- 2023 Faraz Ghahremani, Edon Kelmendi, Joël Ouaknine. Reachability in Injective Piecewise Affine Maps *Proceedings of the 38th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS)* doi:[10.1109/LICS56636.2023.10175723](https://doi.org/10.1109/LICS56636.2023.10175723). 
- Toghrul Karimov, Edon Kelmendi, Joris Nieuwveld, Joël Ouaknine, James Worrell. The Power of Positivity. *Proceedings of the 38th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS)* doi:[10.1109/LICS56636.2023.10175758](https://doi.org/10.1109/LICS56636.2023.10175758)
- 2022 Edon Kelmendi. Computing the Density of the Positivity Set for Linear Recurrence Sequences. *Proceedings of the 37th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS)* doi:[10.1145/3531130.3532399](https://doi.org/10.1145/3531130.3532399). **Distinguished Paper Award.** 
- 2021 Shaull Almagor, Toghrul Karimov, Edon Kelmendi, Joël Ouaknine, James Worrell. Deciding ω -Regular Properties on Linear Recurrence Sequences. *Proceedings of the ACM on Programming Languages (POPL)*, Volume 5, Article No.: 48 doi:[10.1145/3434329](https://doi.org/10.1145/3434329) 
- 2020 Shaull Almagor, Edon Kelmendi, Joël Ouaknine, James Worrell. Invariants for Continuous Linear Dynamical Systems. *Proceedings of the 47th International Colloquium on Automata, Languages, and Programming (ICALP)*, 107:1–107:15 doi:[10.4230/LIPIcs.ICALP.2020.107](https://doi.org/10.4230/LIPIcs.ICALP.2020.107) 
- Mikołaj Bojańczyk, Edon Kelmendi, Rafał Stefański, Georg Zetsche. Extensions of ω -Regular Languages. *Proceedings of the 35th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS)*, Pages 266-272 doi:[10.1145/3373718.3394779](https://doi.org/10.1145/3373718.3394779) 
- 2019 Mikołaj Bojańczyk, Edon Kelmendi, Michał Skrzypczak. $\text{MSO} + \nabla$ is undecidable. *Proceedings of the 34th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS)*, Pages 1-13 doi:[10.1109/LICS.2019.8785892](https://doi.org/10.1109/LICS.2019.8785892) 

- 2018 Edon Kelmendi, Julia Krämer, Jan Křetínský, Maximilian Weininger. Value Iteration for Simple Stochastic Games: Stopping Criterion and Learning Algorithm. In *Computer Aided Verification (CAV). Lecture Notes in Computer Science*, vol 10981. pp 623-642. Springer, Cham. doi:[10.1007/978-3-319-96145-3_36](https://doi.org/10.1007/978-3-319-96145-3_36) 
- 2017 Mikołaj Bojańczyk, Hugo Gimbert, Edon Kelmendi. Emptiness of Zero Automata is Decidable. In *Proceedings of the 44th International Colloquium on Automata, Languages, and Programming (ICALP)*, 106:1–106:13 doi:[10.4230/LIPIcs.ICALP.2017.106](https://doi.org/10.4230/LIPIcs.ICALP.2017.106) 
- Nathanaël Fijalkow, Hugo Gimbert, Edon Kelmendi, Denis Kuperberg. Stamina: Stabilisation Monoids in Automata Theory. In *Implementation and Application of Automata (CIAA). Lecture Notes in Computer Science*, vol 10329. Springer, Cham. doi:[10.1007/978-3-319-60134-2_9](https://doi.org/10.1007/978-3-319-60134-2_9)  
- 2016 Edon Kelmendi, Hugo Gimbert. Deciding Maxmin Reachability in Half-Blind Stochastic Games. In *Symposium of Algorithmic Game Theory (SAGT). Lecture Notes in Computer Science*, vol 9928. Springer, Berlin. doi:[10.1007/978-3-662-53354-3_5](https://doi.org/10.1007/978-3-662-53354-3_5) 

Teaching

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| 2023 – 2024 | <i>Algorithms and Data Structures</i> Queen Mary University of London. | UG |
| 2022 – 2023 | <i>Object-Oriented Programming</i> , Queen Mary University of London. | UG |
| 2020 – 2021 | <i>Probabilistic Model Checking</i> , Tutorials. University of Oxford | PG |
| 2016 – 2017 | <i>Logique et Preuve</i> , Tutorials and some lectures. Université de Bordeaux. | UG |
| | <i>Coloration Informatique</i> , Tutorials. Université de Bordeaux. | UG |
| 2015 – 2016 | <i>Informatique Théorique 1</i> , Tutorials and some lectures. Université de Bordeaux. | UG |
| | <i>Algorithmes et Programmes</i> , Tutorials. Université de Bordeaux. | UG |

Student supervision

Intern

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| 2022 – 2022 | Faraz Ghahremani Summer internship at Max Planck Institute for Software Systems |
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Languages

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| Albanian | Native |
| English | Fluent |
| French | Advanced |