# CV of Ágnes Backhausz

Place of birth        Budapest, Hungary
Citizenship           Hungarian

*Employment*

Sept 2010 –           ELTE Eötvös Loránd University, Budapest, Hungary
                      Institute of Mathematics, Faculty of Science
                      Department of Probability Theory and Statistics
                      2015 –         assistant professor
                      2013 – 2015   on leave
                      2010 – 2013   teaching assistant

Apr 2021 –            Alfréd Rényi Institute of Mathematics
                      Artificial Intelligence Research Group
                      researcher (part-time)

Aug 2013 – 2020       MTA Alfréd Rényi Institute of Mathematics
                      Limits of Structures Research Group
                      2015 – 2020   researcher (part-time)
                      2013 – 2015   post-doctoral researcher (full-time)

*Education*

2013                  PhD in Mathematics at ELTE Eötvös Loránd University, Budapest, Hungary

2008 – 2010           ELTE Eötvös Loránd University, Budapest, Hungary
                      PhD student in Mathematics
                      Supervisor: Tamás Móri

2003 – 2008           ELTE Eötvös Loránd University, Budapest, Hungary
                      MSc in Mathematics

*Activities*

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| 2022 | Member of the local orginizing committee of Rényi100 conference (Alfréd Rényi Institute of Mathematics) |
| 2021 – 2022 | Member of the local organizing committee of European Girls' Mathematical Olympiad |
| 2021 | Member of the programme committee at EUROCOMB |
| 2021 – | Editor at Acta Mathematica Hungarica |
| 2016 – 2019 | Bolyai János Research Grant of the Hungarian Academy of Sciences |
| 2016 – | PhD supervision (Bence Rozner) |
| 2015 – | Seminar talks in Toronto, Prague, Warwick, Lancaster, Marseille, Leipzig |
| 2014 | Organizer of the Graph limits, groups and stochastic processes summer school and workshop at Rényi Institute (with Miklós Abért, Balázs Szegedy, László Lovász and Bálint Virág) |
| 2010 – | Speaker at 6 conferences, 16 workshops (e.g. Oberwolfach, Banff, Luminy, Vienna, Lyon, Zürich) and 3 summer schools |

| 2010 – | Supervising 8 bachelor's theses and 8 master's theses |
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| 2010 – | Organizer of the seminar of the Deparment of Probability Theory and Statistics at Eötvös Loránd University |
| 2007- | Teaching: probability theory, statistics, stochastic processes, Markov chains |

**Publications**

1. Ágnes Backhausz, Edit Bognár, Virus spread and voter model on random graphs with multiple type nodes, [arXiv:2002.06926], to appear in *Annales Univ. Sci. Budapest., Sect. Comp.*.

2. Ágnes Backhausz, Bence Rozner, Barabási-Albert random graph with multiple type edges with perturbation. *Acta Mathematica Hungarica*. **161** (1), 212-229 (2020).

3. Ágnes Backhausz, Balázs Szegedy, Action convergence of operators and graphs. To appear in the *Canadian Journal of Mathematics*. [arXiv:1811.00626]

4. Ágnes Backhausz, Bence Rozner, Asymptotic degree distribution in preferential attachment graph models with multiple type edges. *Stochastic Models*. **35** (4), 496-522 (2019).

5. Ágnes Backhausz, Balázs Gerencsér, Viktor Harangi, Entropy inequalities for factors of IID. To appear in *Groups, Geometry, and Dynamics*. DOI: 10.4171/GGD/492

6. Ágnes Backhausz, Dávid Kunszenti-Kovács, On the dense Preferential Attachment Graph models and their graphon induced counterpart. *Journal of Applied Probability*. **56** (2), 590-601 (2019).

7. Ágnes Backhausz, Balázs Szegedy, On the almost eigenvectors of random regular graphs. To appear in *The Annals of Probability*. **47** (3) 1677-1725 (2019) [Presented at the Bourbaki seminar at Institute Henri Poincaré, Paris]

8. Ágnes Backhausz, Balázs Gerencsér, Viktor Harangi, Máté Vizer. Correlation bound for distant parts of factor of IID processes. *Combinatorics, Probability and Computing* **27** (1) 1-20, 2018.

9. Ágnes Backhausz, Balázs Szegedy. On large girth regular graphs and random processes on trees. *Random Structures and Algorithms* **53** (3), 389-416, 2018.

10. Ágnes Backhausz, Bálint Virág. Spectral measures of factor of i.i.d. processes on vertex-transitive graphs. *Annales de l'Institute Henri Poincaré - Probabilités et Statistiques* **53** (4), 2260-2278, 2017.

11. Ágnes Backhausz, Tamás F. Móri. Further properties of a random graph with duplications and deletions. *Stochastic Models* **32** (1), 99-120, 2016.

12. Ágnes Backhausz, Tamás F. Móri. Asymptotic properties of a random graph with duplications. *Journal of Applied Probability* **52** (2), 375-390, 2015.

13. Ágnes Backhausz, Balázs Szegedy, Bálint Virág. Ramanujan graphings and correlation decay in local algorithms. *Random Structures and Algorithms* **47** (3), 424-435, 2015.

14. Ágnes Backhausz, Tamás F. Móri. Asymptotics of a renewal-like recursion and an integral equation. *Applicable Analysis and Discrete Mathematic*s **8,** 200-223, 2014.

15. Ágnes Backhausz, Tamás F. Móri. Weights and degrees in a random graph model based on 3-interactions. *Acta Mathematica Hungarica* **143** (1), 23-43, 2014.

16. Ágnes Backhausz, Tamás F. Móri. A random model of publication activity. *Discrete Applied Mathematics* **162,** 78-89, 2014.

17. Ágnes Backhausz, Tamás F. Móri, Degree distribution in the lower levels of the uniform recursive tree. *Annales Univ. Sci. Budapest., Sect. Comp.* **36,** 53-62, 2012.

18. Ágnes Backhausz, Tamás F. Móri, A random graph model based on 3-interactions. *Annales Univ. Sci. Budapest., Sect. Comp.* **36**, 41-52, 2012.

19. Ágnes Backhausz, Tamás F. Móri, Local degree distribution in scale free random graphs. *Electronic Journal of Probability* **16** (54), 1465-1488, 2011.

20. Ágnes Backhausz, Limit distribution of degrees in random family trees. *Electronic Communications in Probability* **16**, 27-37, 2011.

21. Ágnes Backhausz, Local degree distributions: examples and counterexamples. *Periodica Mathematica Hungarica* **63** (2), 153-171, 2011.

22. Ágnes M. Backhausz, Vilmos Komornik, Tivadar Szilágyi, A simplified multidimensional integral. *Czechoslovak Mathematical Journal* **59** (3), 721-739, 2009.

**Preprints**

1. Ágnes Backhausz, Charles Bordenave, Balázs Szegedy, **Typicality and entropy of processes on infinite trees.** [arXiv:2102.02653]