

Máté Baranyi

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date of birth: 1995-02-23



Education

- PhD** 2018–ongoing, *Budapest University of Technology and Economics*.
Department of Stochastics & Doctoral School of Mathematics and Computer Science.
Subject: *Mixed graphical models*, supervised by Dr. Marianna Bolla
- MSc** 2016–2018, *Budapest University of Technology and Economics*.
MSc in Applied Mathematics, Financial Mathematics specialization, I graduated Summa Cum Laude.
MSc thesis: *Graphical models and some related algorithms*, supervised by Dr. Marianna Bolla
- BSc** 2013–2016, *Budapest University of Technology and Economics*.
BSc in Mathematics, Applied Mathematics specialization, I graduated Cum Laude.
BSc thesis: *The separator of a subset of a semigroup*, supervised by Dr. Attila Nagy
- Secondary school** 2009–2013, *Esze Tamás Gimnázium, Mátészalka*.
Advanced Final Exam in Mathematics

Experience and Teaching

- 2018 fall–ongoing **Teaching as PhD student**, *Budapest University of Technology and Economics*.
I mainly hold practice classes for electrical engineering students on probability theory, and for labor classes for mathematics students on statistics.
- 2017 fall–2019 spring **Demonstrator**, *Budapest University of Technology and Economics*.
Grading weekly homeworks and administrating the result table for courses held for mathematics students, called Mathematical Statistics, Statistics I., Markov processes & Martingales.
- 2017 august–2018 march **Intern**, *Morgan Stanley Budapest*.
Model Risk Management internship in the Institutional Equity Division. Writing and maintaining model review documents for exotic equity-based financial products from model risk perspective.

University and other projects

- 2019 Mar–2019 Oct **BME–Nokia Bell Labs collaboration**, *PhD*.
Within the framework of this collaboration we were working on topics related to dimension reduction of high and varying dimensional sensor data.
- 2018 Jun–2020 May **BME FIKP-MI/SC**, *PhD*.
Within the framework of this project we were working on topics related to artificial intelligence and time-series analysis, funded by the Ministry of Human Capacities (EMMI).
- 2017 fall **Individual Projects II**, *MSc*.
Within the framework of this course I worked on an Educational Data Mining related task supervised by Roland Molontay from BME.
- 2017 spring **Individual Projects I**, *MSc*.
Within the framework of this course I worked on a Credit Risk Scorecard Development related task supervised by Ildikó Priksz from OTP Bank.
- 2015 spring–2015 fall **Programming Projects I and II**, *BSc*.
Within the framework of these courses I worked on a task related to the mathematics of Voting Systems.

Computer and Programming skills

Intermediate knowledge of: **Python**, **R**, **LaTeX**, **Excel**, **Tensorflow**.

Basic knowledge of: **Mathematica**, **C**, **C++**, **HTML**, **MatLab**.

Languages

Hungarian	native language
English	fluent (writing, reading), intermediate (speaking)
German	intermediate (writing, reading), basic (speaking)

Conferences

- 2020 Oct **21st Annual ACM SIGITE 2020 Conference**, *online*.
Short presentation, titled *Interpretable Deep Learning for University Dropout Prediction*
- 2019 Jul **International Symposium on Educational Technology (ISET)**, *Hradec Kralové, Czechia*.
Short presentation, titled *Effect of Mathematics Remediation on Academic Achievement – A Regression Discontinuity Approach*
- 2018 Dec **11th International Conference of the ERCIM WG on Computational and Methodological Statistics**, *Pisa, Italy*.
Short presentation, titled *Nonparametric regression estimation in chain graph models*

Publications

- [1] Máté Baranyi, Marcell Nagy, and Roland Molontay. Interpretable Deep Learning for university dropout prediction. In *Proceedings of the 21st Annual Conference on Information Technology Education*, page 13–19, New York, NY, USA, 2020. Association for Computing Machinery. doi:10.1145/3368308.3415382.
- [2] Máté Baranyi and Marianna Bolla. Iterated Conditional Expectation algorithm on DAGs and regression graphs. *Econometrics and Statistics*, 20:131–152, 2021. doi:10.1016/j.ecosta.2020.05.003.
- [3] Máté Baranyi, Kristóf Gál, Roland Molontay, and Mihály Szabó. Modeling Students' Academic Performance Using Bayesian Networks. In *2019 17th International Conference on Emerging eLearning Technologies and Applications (ICETA)*, pages 42–49. IEEE, November 2019. doi:10.1109/ICETA48886.2019.9040067.
- [4] Máté Baranyi and Roland Molontay. Effect of mathematics remediation on academic achievement – a regression discontinuity approach. In *2019 International Symposium on Educational Technology (ISET)*, page 29–33. IEEE, 7 2019. doi:10.1109/ISET.2019.00016.
- [5] Máté Baranyi and Roland Molontay. Comparing the effectiveness of two remedial mathematics courses using modern regression discontinuity techniques. *Interactive Learning Environments*, 29(2):247–269, 2021. doi:10.1080/10494820.2020.1839506.
- [6] Marianna Bolla, Fatma Abdelkhalek, and Máté Baranyi. Graphical models, regression graphs, and recursive linear regression in a unified way. *Acta Scientiarum Mathematicarum*, 85(12):9–57, 2019. doi:10.14232/actasm-018-331-4.
- [7] Marianna Bolla, Tamás Szabados, Máté Baranyi, and Fatma Abdelkhalek. Block circulant matrices and the spectra of multivariate stationary sequences. *Special Matrices*, 9(1):36–51, Jan 2021. doi:10.1515/spma-2020-0121.