Breki Pálsson

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Languages
Icelandic: Native speaker,
English: Advanced,
French: Intermediate,
Danish: Intermediate.

Programming
Python, C++ , C, R, Java, SAS, SQL, TensorFlow, Sagemath, Latex.

References

Sigurður Örn Stefánsson,
Professor at the University of Iceland Mail

Gabor Wiese,
Professor at the University of Luxembourg Mail

Antoine Ducros,
Professor Sorbonne UniversityMail

Profile

I am a PhD student at the University of Iceland under the supervision of Sigurður Örn Stefánsson. My current area of research is on random walks, planar graphs and the scaling limit of random trees. Previously I completed the joint program "M2 de Mathématiques Fondamentales" by Sorbonne Université, Université de Paris, and Université Sorbonne Paris Nord, where I focused mainly on subjects relating to number theory. I was awarded the PGSM Masters scholarship to fund my studies. After finishing my courses, I did a five month research internship at the University of Luxembourg under the supervision of Professor Gabor Wiese on the asymptotic behavior of the coefficient field of modular forms modulo p.

Education

2024 - **University of Iceland**
PhD student

2021 - 2023 **Sorbonne Université** Mention bien
MSc. Mathématiques fondamentales. Collaboration of three universities in Paris with an emphasis on pure mathematics and research. Studied on a full scholarship from the association FSMP.

2018 - 2021 **University of Iceland** First class with distinction
BSc. Stærðfræði. With a focus on mathematical analysis.

2019 **McGill University, Canada**
One semester exchange program.

Projects & presentations

2023 **Investigating Residue Degrees in Number Fields related to Modular Forms and their Connections to Permutation Cycles.**
Presentation at the Mathematics Colloquium at the University of Iceland.

2023 **On the Asymptotic Behavior of the Coefficient Field of Newforms Modulo** p
A five-month master's research internship in collaboration with the University of Luxembourg. The project focused on the development and programming of software to calculate statistics on objects related to number theory."PDF.

2023 **Modular Forms and Congruences**
Lecture and introduction for a group of master's students PDF.

2022 **The Hasse-Minkowski Theorem**
Lecture and presentation on the research project of the first year in the master's program. PDF

2021 **Symplectic varieties**
Lecture and presentation on the final project in undergraduate studies.PDF.

Conferences & Short Courses

2025 **University of Oxford** Workshop
Oxford Probability workshop on random discrete structures.

University Paris-Saclay Conference
GdR Branchement

Université de Bordeaux Conference
Journées de combinatoire de Bordeaux (JCB)

Erdős Center Winter School
School on Disordered Media

2024 **Université de Montréal** Summer School
2024 CRM-PIMS Summer School in Probability

2023 **Mathematical Seminar in Farum** Conference
Took part in a conference, where I presented my project **Modular Forms and Congruences**

2022 **Aix-Marseille University** Master Class
Topology and algebra: knots, algebraic curves and singularities

Eötvös Loránd University Summer school
Summer school in number theory

EPFL Conference
Number Theory Days

Notable Achievements

2019 **Reboot Hackathon**
First prize; Lighting up Reykjavik, for a project that allows travellers to obtain information about interesting places in Reykjavik by speaking to AI-powered basalt pillars or through a website.

2017, 2018 **Mathematical Olympiad**
One of Iceland's six representatives in the mathematics Olympiad team, held in Brazil and Romania. Result.

2015-2018 **Various competitions** Contestant
Icelandic National Mathematics Contest
2017, 2016 (6th and 2nd)

BOXIÐ - innovation and construction competition
2016 (3rd)

Nordic Mathematical Contest
2018, 2017, 2016

Icelandic National Physics Contest
2018, 2017 (18th and 12th)