Curriculum Vitae of Dagur Asgeirsson

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EDUCATION

PhD, Mathematics (ongoing)
University of Copenhagen   February 2025 (expected)

Master of Science, Mathematics
Université de Paris   August 2021
Laureate of the Paris Graduate School of Mathematics scholarship for two years, awarded
by the *Fondation Sciences Mathématiques de Paris*. Mention *très bien*.

Bachelor of Science, Mathematics
University of Iceland, Reykjavik   June 2019
First class with distinction.

Matriculation examination (Icelandic: stúdentspróf)
Reykjavik Junior College (Menntaskólinn í Reykjavík)   May 2016
First class with distinction.

PROFESSIONAL EXPERIENCE

University of Copenhagen   September 2021 – February 2025
PhD candidate, mathematics.

- Supervisor: Dustin Clausen. Topic: *Toward a formalization of solid modules*.
- Teaching assistant, twice in Algebra 3 (Galois theory for first-year master's students) and once in Introduction to the Mathematical Sciences (*Introduktion til de matematiske fag*, an introductory calculus course taught in Danish).
- Supervised a project for first year students on interactive theorem proving in Lean.

University of Iceland   May 2017 – December 2018
Teaching assistant in Linear Algebra and Algebra I (introductory abstract algebra).
Research assistant.

Reykjavik Junior College (Menntaskólinn í Reykjavík)   August 2016 – May 2019
Mathematics teacher

PUBLICATIONS AND PREPRINTS

- *Formalization of discrete condensed objects.* In preparation.

- *Categorical foundations of formalized condensed mathematics* (joint with R. Brasca, N. Kuhn, F. Nuccio, and A. Topaz) preprint. (URL: arXiv:2407.12840). Submitted.

- *Towards solid abelian groups: A formal proof of Nöbeling's theorem,* preprint. (URL: arXiv:2309.07252). Accepted for publication at ITP 2024.

- *Palindromes in finite groups and the Explorer-Director game,* with Pat Devlin. Internat. J. Algebra Comput. 31 (2021), no. 3, 491-499. doi:10.1142/S0218196721500235. Note: this work was part of my bachelor's thesis at the University of Iceland (preprint: arXiv:1904.00467).

TALKS

- (Upcoming) Fifteenth Conference on Interactive Theorem Proving, Tbilisi, Georgia. Title: *Towards solid abelian groups: A formal proof of Nöbeling's theorem.* September 2024.

- Hausdorff trimester *Prospects of formal mathematics,* participant talk. Title: *Condensed mathematics in mathlib.* June 2024.

- Lean together 2024, virtual conference. Title: *Condensed mathematics in mathlib.* January 2024.

- Stærðfræði á Íslandi (e. Mathematics in Iceland), conference organised by the Icelandic Mathematical Society (in Icelandic). Title: *Gagnvirkar tölvusannanir (e. Interactive theorem proving).* October 2023.

- Formalization of Cohomology Theories, workshop in Banff. Title: *Discrete condensed sets.* May 2023.

- Mathematics colloquium at the University of Iceland. Title: *Interactive theorem proving.* March 2023.

- Meeting of the Icelandic Mathematical Society (in Icelandic). Title: *Gagnvirkar tölvusannanir (e. Interactive theorem proving).* February 2023.

- Mathematics colloquium at the University of Iceland. Title: *Condensed mathematics.* January 2023.

- Topics in Algebraic Topology, University of Copenhagen. Title: *Solid spectra.* January 2022.

- Working group on Condensed Mathematics, Sorbonne Université. Title: *Solid A-modules.* May 2021.

- Working group on Condensed Mathematics, Sorbonne Université. Title: *Condensed abelian groups.* March 2021.

- Mathematics colloquium at the University of Iceland. Title: *Palindromes in finite groups.* February 2019.

OTHER ACTIVITIES

- Mathlib reviewer, from July 2024.

- Invited participant in the virtual AIM workshop on formalization of algebraic geometry, June 2024.

- Visited the Hausdorff institute for mathematics in Bonn, Germany, in June 2024, during the trimester *Prospects of formal mathematics.*.

- Organised a masterclass on the formalisation of condensed mathematics at the University of Copenhagen, June 2023.

- Invited participant in the BIRS workshop on formalization of cohomology theories in Banff, Canada, May 2023.

- Organised an event celebrating cultural diversity in the mathematics department of the University of Copenhagen, September 2022.

- Organised the conference *Young Topologists' Meeting* in Copenhagen, July 2022.

- Attended *Twinned Conference on Homotopy Theory with Applications to Arithmetic and Geometry* at the Max Planck Institute for Mathematics in Bonn, June 2022.

- Completed a teaching mentorship program at the University of Copenhagen, where a group of teachers gave and received feedback from each other on teaching.

- Coached the Icelandic IMO (International Mathematical Olympiad) team in 2019 and 2020. I was in charge of coaching for one week each year, covering parts of the Algebra and Combinatorics curricula.

- Students' representative in meetings of the Department of Mathematics at the University of Iceland, academic year of 2017-2018. Responsible for ensuring that the department valued students' interests in all desicions.

LANGUAGES

Icelandic, English, Swedish, Danish, French.

HONOURS AND ACCOMPLISHMENTS

- Laureate of the Paris Graduate School of Mathematics (PGSM) scholarship awarded by Fondation Sciences Mathématiques de Paris (FSMP) to masters students in mathematics in Paris.

- Recipient of a grant from Landsbankinn, the major bank of Iceland, awarded annually to three exceptional prospective graduate students.

- Awardee of the Professor Sigurður Helgason fund for excellence in mathematics in 2018.
- Recipient of a grant from the University of Iceland Student Achievement and Incentive Fund awarded to the top new students at the University of Iceland in 2016.
- Recipient of grants for exceptional secondary school students from two of the major banks in Iceland, Landsbankinn in 2014 and Íslandsbanki in 2015.
- Represented Iceland at the International Mathematical Olympiad in 2014 and 2015. Received an Honourable mention for a full solution to a problem.
- Top placements in the Icelandic national olympiads in mathematics, physics, chemistry and programming in the period 2014-2016.