

CURRICULUM VITAE

BJARKI GUNNARSSON

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PERSONAL DETAILS

Gender: Male
Date of birth: 18th of June, 1999
Place of birth: Reykjavik, Iceland
Citizenship: Iceland

EDUCATION

1/2019–02/2022 BSc in Mathematics from the University of Iceland
10/2022–7/2023 MSc in Mathematics at Freie Universität Berlin (unfinished)
1/2024–02/2026 MSc in Mathematics from the University of Iceland
Exchange semester at UW Madison, Fall 2024

Master's thesis: *Concurrent Monads in 2-Categories*;
Supervisors: Tarmo Uustalu and Anders Claesson
Specialization: Category Theory, Agda, Logic

MASTER'S THESIS

Concurrent monads are a type of monad that can be used to model parallel execution. We formalized them in Agda using categories parameterized by their object type. This makes expressing the interaction of Kleisli categories and their respective base categories much easier.

Alongside the formalization, we introduce two 2-categories. The internal monads of one are exactly concurrent monads while they do not admit an internal

resolution. The internal monads of the other are almost concurrent monads, for example their monoidality witnesses are an oplaxly natural transformations. But these almost concurrent monads admit internal resolutions.

WORKING EXPERIENCE

03/2020–07/2024 Research Assistant at Reiknistofnun Háskólans (part-time)
01/2024–05/2024 TA in the course Blockchains, which focused how a blockchains are implemented
03/2025–now Research Assistant in the ICEPROOF project (full-time)

SCHOOLS AND CONFERENCES VISITED

June 2024 Summer School of Cool Logic and Nordic Logic Summer School 2024 [link](#)
March 2025 Estonian Winter School in Computer Science 2025 [link](#)
September 2025 International Conference on Interactive Theorem Proving 2025 [link](#)

LANGUAGE KNOWLEDGE

Icelandic	native
English	near native
German	fair

I'm interested in languages in general and have taken a couple of courses in Mandarin, one in Hindi and one in Menominee, an Algonquian language.

Reykjavík, January 9, 2026