

MATEMATISKA INSTITUTIONEN
STOCKHOLMS UNIVERSITET
Avd. Matematik

SJÄLVSTÄNDIGT ARBETE I MATEMATIK

Torsdagen den 27 augusti juni kl. 10:00-11:00 presenterar Martin Lundfall sitt arbete “Formalizing Real Numbers in Agda” (15 högskolepoäng, grundnivå).

Handledare: Håkon Robbestad Gylterud

Plats: Sal 32, hus 5, Kräftriket

Sammanfattning: With his iconic book Foundations of Constructive Analysis (Bishop and Bridges 1985), Errett Bishop presented the constructive notion of a real number and showed that many of the important theorems of real analysis could be proven without using the law of the excluded middle. This paper aims to show how this notion can be formalized in the dependently typed programming language of Agda. Using the Agda Standard Library (v0.9) and additional work by the GitHub user sabry (Sabry 2014), a major step towards formalizing the definition of real numbers and the equivalence relation on them is taken. In the process, an alternate definition of rational numbers in Agda is presented and many important statements on rationals are proven.

Alla intresserade är välkomna!