**Newton Iteration**

Newton's method is a simple method for finding approximations of roots of non-linear real functions. The goal is to develop a generic framework for this that can be instantiated for particular functions and connecting it with Isabelle's existing packages for **interval arithmetic** and **Taylor models**.

Advisor: [Manuel Eberl](https://www21.in.tum.de/~eberlm)

Introduction to Interval Analysis:

http://www-sbras.nsc.ru/interval/Library/InteBooks/IntroIntervAn.pdf

From Interval Analysis to Taylor Models - An Overview

https://pdfs.semanticscholar.org/f658/ebf39fda70f35510acaf45c783d3ea091091.pdf

20.10 Reading IIA until mid-chapter 6.

Review on proofs in other proof assistants

https://math.stackexchange.com/questions/2963302/finding-libraries-of-formalized-mathematics