

# Some title

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## **Abstract**

This is the paper's abstract ...

## **1 Introduction**

### **1.1 What are numbers?**

### **1.2 Positional numeral systems**

**Outline** The remainder of the thesis is organized as follows.

## **2 A gentle introduction to dependently typed programming in Agda**

There are already plenty of tutorials and introductions of Agda[1]. Nonetheless, we will provide a simple and self-contained tutorial in this section, covering the part (and only the part) we need in this work.

Some of the more advanced constructions (such as views and universes) used in the following sections will be introduced along the way.

## 2.1 Some basics

## 2.2 Dependent types

## 2.3 Simply typed programming in Agda

## 2.4 Dependently typed programming in Agda

# 3 Representing positional numeral systems

## 3.1 Bases

## 3.2 Offsets

## 3.3 Number of digits

# 4 Properties of Num

## 4.1 Categorizing Num

## 4.2 Views

# 5 Conclusions

# References

- [1] U. Norell. Dependently typed programming in agda. In *Advanced Functional Programming*, pages 230–266. Springer, 2009.