



SCHOOL OF COMPUTATION,  
INFORMATION AND TECHNOLOGY —  
INFORMATICS

TECHNISCHE UNIVERSITÄT MÜNCHEN

Master's Thesis in Informatics

**Constructing Linear Types in Isabelle/HOL**

Felix Kraye





SCHOOL OF COMPUTATION,  
INFORMATION AND TECHNOLOGY —  
INFORMATICS

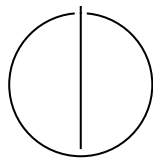
TECHNISCHE UNIVERSITÄT MÜNCHEN

Master's Thesis in Informatics

**Constructing Linear Types in Isabelle/HOL**

**Konstruktion linearer Typen in  
Isabelle/HOL**

Author:	Felix Kraye
Examiner:	Florian Bruse
Supervisor:	Dmitriy Traytel, Tobias Nipkow
Submission Date:	13-11-2025



I confirm that this master's thesis is my own work and I have documented all sources and material used.

Munich, 13-11-2025

Felix Kraye

## **Acknowledgments**

# Abstract

# Contents

<b>Acknowledgments</b>	<b>iv</b>
<b>Abstract</b>	<b>v</b>
<b>1 Introduction</b>	<b>1</b>
1.1 Section . . . . .	1
1.1.1 Subsection . . . . .	1
<b>2 Background</b>	<b>3</b>
2.1 MRBNFs . . . . .	3
<b>3 Methodology (?)</b>	<b>4</b>
3.1 Linearization of MRBNFs . . . . .	4
3.2 Examples . . . . .	4
<b>Abbreviations</b>	<b>5</b>
<b>List of Figures</b>	<b>6</b>
<b>List of Tables</b>	<b>7</b>
<b>Bibliography</b>	<b>8</b>

# 1 Introduction

## 1.1 Section

Citation test [Lam94].

Acronyms must be added in `main.tex` and are referenced using macros. The first occurrence is automatically replaced with the long version of the acronym, while all subsequent usages use the abbreviation.

E.g. `\ac{TUM}`, `\ac{TUM}`  $\Rightarrow$  Technical University of Munich (TUM), TUM

For more details, see the documentation of the acronym package<sup>1</sup>.

### 1.1.1 Subsection

See Table 1.1, Figure 1.1, Figure 1.2, Figure 1.3.

Table 1.1: An example for a simple table.

A	B	C	D
1	2	1	2
2	3	2	3

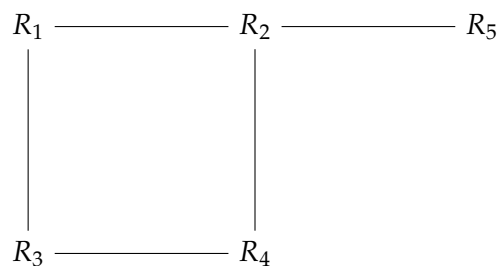


Figure 1.1: An example for a simple drawing.

---

<sup>1</sup><https://ctan.org/pkg/acronym>





Figure 1.2: An example for a simple plot.

```
SELECT * FROM tbl WHERE tbl.str = "str"
```

Figure 1.3: An example for a source code listing.

## 2 Background

### 2.1 MRBNFs

## **3 Methodology (?)**

### **3.1 Linearization of MRBNFs**

### **3.2 Examples**

# Abbreviations

**TUM** Technical University of Munich

## List of Figures

1.1	Example drawing . . . . .	1
1.2	Example plot . . . . .	2
1.3	Example listing . . . . .	2

# List of Tables

1.1	Example table . . . . .	1
-----	-------------------------	---

# Bibliography

- [Lam94] L. Lamport. *LaTeX : A Documentation Preparation System User's Guide and Reference Manual*. Addison-Wesley Professional, 1994.