Abstract
Generalised spectra, *id est* classes finitely axiomatisable in existential second-order logic restricted to finite structures, are known by Fagin's theorem to coincide with members of the complexity class **NP**. Thereby, the problem of **NP** being closed under complementation reduces to the problem whether every class of finite structures complementary to a generalised spectrum is, too, a generalised spectrum. Provided **P** ≠ **NP**, a proof thereof could then possibly be based on finding a particular generalised spectrum (thereby an **NP** class) whose complement, while in co**NP** would not be in **NP**. Pursuits of such a proof, too, however, have been to no avail. A partial resolution of this problem (itself a special case to so called Asser's problem) is Fagin-Hájek theorem, claiming that a subclass of **NP**, the class of so called `monadic` **NP** `sets` is not closed under complementation. Reproducing Fagin's original proof of the theorem is the aim of this thesis, along with introducing the reader to all preliminary apparatus needed for the proof.