

Preface

Hilbert Functions play major roles in Algebraic Geometry and Commutative Algebra, and are becoming increasingly important also in Computational Algebra. They capture many useful numerical characters associated to a projective variety or to a filtered module over a local ring.

Starting from the pioneering work of D.G. Northcott and J. Sally, we aim to gather together in one place many new developments of this theory by using a unifying approach which gives self-contained and easier proofs.

The extension of the theory to the case of general filtrations on a module, and its application to the study of certain graded algebras which are not associated to a filtration are two of the main features of the monograph.

The material is intended for graduate students and researchers who are interested in Commutative Algebra, in particular in the theory of the Hilbert functions and related topics.

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