pure and applied operator theory. Here is a list of the contributions:

M.S. Livšic, A.S. Markus Joint spectrum and discriminant varieties of commuting nonselfadjoint operators (20p) (On the edge of algebraic geometry. Investigates the spectrum of commuting operators with finite dimensional imaginary parts)

D. Alpay, L. Baratchart, A. Gombani On the differential structure of matrix-valued rational inner functions (37p) (Parametrizations are described for the submanifold of such functions. Related to linear control systems)

J.A. Ball Conservative dynamical systems and nonlinear Livšic-Brodskii nodes (29p) (Classical results from linear system theory are extended for nonlinear systems)

A. Ben-Artei, I. Gohberg Orthogonal polynomials over Hilbert modules (31p) (The polynomials are obtained by orthogonalization of the powers of the shift matrix in the modules of $C^*$-algebra of block diagonal matrices in $ℓ^2$)

R. Bhatia, C. Davis Relations of linking and duality between symmetric gauge functions (11p) (Mainly the introduction of linked s.g.f. and the quotient or 2 s.g.f.)

G. Christner, K.Y. Li, J. Rovnyak Julia operators and coefficient problems (44p) (Relates to contractive triangular operators and the Schur algorithm)

H. Dym Shifts, realizations and interpolation, redux (60p) (A study of vector valued meromorphic functions invariant with respect to a generalized backward shift)

A. Feintuch Arveson’s distance formulae and robust stabilization for linear time-varying systems (12p)

P. Fillmore, M. Khalkhali Entire cyclic cohomology of Banach algebras (8p) (Report on recent results. Details appear elsewhere)

P.A. Fuhrmann The bounded real characteristic function and Nehari extension (52p) (Study of analytic functions in the right half plane with close links to $H^∞$ control)

L. Hanin On isometric isomorphism between the second dual to the small Lipschitz space and the big Lipschitz space (9p)

J.W. Helton, J.J. Wavrik Rules for computer simplification of the formulas in operator model theory and linear systems (30p) (computer algebra and operator theory)

V. Khatskevich Some global properties of fractional-linear transformations (7p)

E. Nordgren, P. Rosenthal Boundary values of Beresin symbols (7p) (All Beresin symbols of an operator have continuous extensions to the boundary if the operator is a translate of a compact operator)

M. Rosenblum Generalized Hermite polynomials and the Bose-like oscillator calculus (28p) (Study of these polynomials, relation to generalized Fourier transform and application in said calculus)

N. Zobin, V. Zobina A general theory of sufficient collections of norms with a prescribed semigroup of contractions (20p) (Review on the interpolation theory of such norms)

A. Bultheel

Basic Algebraic Geometry
Igor R. Shafarevich
Second, Revised and Expanded Edition, Translated by Miles Reid, Springer-Verlag, 1994

Algebraic geometry deals with the study of solution sets of polynomial systems. During the 19th century, it played a central role in mathematics. Towards the middle of our century, algebraic geometry has undergone a complete reconstruction, while the application of its ideas has grown tremendously.

The aim of the book is to provide an overall view of the many varied aspects of algebraic geometry. The prerequisites for reading the first volume are kept to a minimum. In addition to an undergraduate algebra course, the author assumes familiarity with finite and transcendental field extensions, and with ideals and quotient rings. For the second volume, the reader must be familiar with the definition of differential manifolds, with the basic theory of analytic functions of a complex variable and know about homology, cohomology and differential forms. For the last chapter, familiarity with the notion of fundamental group and the universal cover is needed.
Volume 1 contains Book 1 and corresponds to Part I of the first edition. The titles of the chapters are the following.

I. Basic Notions
II. Local Properties
III. Divisors and Differential Forms
IV. Intersection Numbers
Algebraic Appendix

Compared to the first edition, a lot of material of a rather concrete geometric nature has been added. Also more concrete algebraic varieties have been considered. This edition treats questions related to degenerate fibres in families. Finally, some applications to number theory have been added.

The second volume starts by considering algebraic varieties from a more general and invariant point of view. It is organized in two books, Book 2 deals with schemes and varieties, whereas complex algebraic varieties and complex manifolds are treated in Book 3. The chapter headings are the following.

V. Schemes
VI. Varieties
VII. The topology of Algebraic Varieties
VIII. Complex Manifolds
IX. Uniformisation
Historical Sketch

There are two main additions compared to the first edition. The first one is the notion of the algebraic variety classifying algebraic or geometric objects. The second addition concerns Kähler metrics and a description of Hodge's theorem.

The first volume goes 'from the particular to the general'. This style is dropped in the second volume. Though, throughout the whole work, the motivation of the ideas is stated in a human-oriented way. Furthermore, many meaningful examples illustrate the theory. This makes the book excellent for teaching purposes. Each paragraph contains a list of exercises. There are guidelines for further reading in the preface to the second volume. The index is the same for both volumes, hereby it is indicated which topic occurs in what volume.

According to the translator's experience it is impossible for many students to do both the research for a Ph.D. thesis and to master all the theoretical foundations of algebraic geometry at the same time. Therefore, Shafarevich's book is a must for anyone looking for a liberal education in algebraic geometry.

More than once, I have had the experience that, whenever in need of concepts and results from algebraic geometry, it is very hard to find an accessible reference in the literature. To my best knowledge, only this book manages to describe so many advanced constructions while still being accessible for researchers outside the field of algebraic geometry. This book is indeed a tremendous achievement.

J. Verschelde

A Survey of Preconditioned Iterative Methods
Are Magnus Bruaset

This book presents an overview of iterative methods and preconditioners for the solution of linear systems. The emphasis lies on problems arising from differential equations, but the discussion is quite general and useful for anybody. The monograph is aimed at a wide audience, specifically to those who want to enter the world of iterative linear system solvers.

The theory is restricted to a minimum. The study is almost complete. It consists of three parts: an overview of methods based on matrix splittings including Gauss-Seidel and SOR; a detailed survey on Krylov iterative methods including Conjugate Gradients, GMRES and QMR; and a good introduction to various types of preconditioners including incomplete factorisations, multilevel and domain-decomposition approaches. Especially the latter part is very interesting. The author pays a lot of attention to implementation issues for vector and parallel computers. The list of 431 references is impressive. The epilogue gives an excellent summary of the main ideas. The style is talkative. The explanation is brief: sometimes I had the impression of a bibliographical study with notes that link the references together. Often I liked the author to give more chapter and verse. The message is not always very clear and the reader often needs a lot of prescience to understand the details. The details are hard to dis-
Yet another descriptor, the variety \( V_t \), is the variety generated by all trilinear forms between triplets of views. It has been shown that when \( m = 3 \), \( V_b \) is a reducible variety with one component corresponding to \( V_t \) and another corresponding to the trifocal plane. Basic algebraic geometry: Igor R. Shafarevich Second, revised and expanded edition, translated by Miles Reid, Springer-Verlag, 1994 Volume 1: Varieties in projective space ISBN 3-540-54812-2, Softcover, DM 68. Volume 2: Schemes and complex manifolds ISBN 3-540-57554-5, Softcover, DM 68. Canonic Representations for the Geometries of Multiple Projective Views. Quang-Tuan Luong, Thierry Viéville. Computer Science.