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**Vira Babenko\*** ([vera.babenko@gmail.com](mailto:vera.babenko@gmail.com)), The University of Utah, Department of Mathematics, Rm 233 155 S 1400 E, Salt Lake City, UT 84112. *Optimization and Numerical Analysis of Set-Valued or Fuzzy-Valued functions - A Unified Approach and Applications.*

A wide variety of questions from social, economic, physical, and biological sciences can be formulated using functions with values that are fuzzy sets or sets in finite or infinite dimensional spaces. Set-valued and fuzzy-valued functions attract attention of many researchers and allow them to look at numerous problems from a new point of view and provide them with new tools, ideas and results. In this talk we consider a generalized concept of such functions, that of functions with values in L-spaces. This class of functions encompasses set-valued and fuzzy-valued functions as special cases which allows us to investigate them from a common point of view. We will discuss several problems of Approximation Theory, Optimization and Numerical Analysis for functions with values in L-spaces. In particular, we will present numerical methods for solving Fredholm and Volterra integral equations for such functions. (Received September 10, 2015)