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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Literature Review -- System Architecture -- Multi-Objective optimization -- Simulations in single and multi-objective optimization -- Outlook.
Sommario/riassunto	This work presents a new approach to portfolio composition in the stock market. It incorporates a fundamental approach using financial ratios and technical indicators with a Multi-Objective Evolutionary Algorithms to choose the portfolio composition with two objectives the return and the risk. Two different chromosomes are used for representing different investment models with real constraints equivalents to the ones faced by managers of mutual funds, hedge funds, and pension funds. To validate the present solution two case studies are presented for the SP&500 for the period June 2010 until end of 2012. The simulations demonstrates that stock selection based on financial ratios is a combination that can be used to choose the best companies in operational terms, obtaining returns above the market

average with low variances in their returns. In this case the optimizer found stocks with high return on investment in a conjunction with high rate of growth of the net income and a high profit margin. To obtain stocks with high valuation potential it is necessary to choose companies with a lower or average market capitalization, low PER, high rates of revenue growth and high operating leverage.