The Factor-Portfolios Approach to Asset Management using Genetic Algorithms

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We present an investment process that: (i) decomposes securities into risk factors; (ii) allows for the construction of portfolios of assets that would selectively expose the manager to desired risk factors; (iii) perform a risk allocation between these portfolios, allowing for tracking error restrictions in the optimization process and (iv) give the flexibility to manage dinamically the transfer coeffficient (TC). The contribution of this article is to present an investment process that allows the asset manager to limit risk exposure to macro-factors (including expectations on correlation dynamics) whilst allowing for selective exposure to risk factors using mimicking portfolios that emulate the behaviour of specific factors. An Artificial Intelligence (AI) optimisation technique is used for risk-budget allocation to factor-portfolios.