

INTENSIONALITY, DEFINABILITY AND COMPUTATION

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Abstract. We look at intensionality from the perspective of computation. In particular, we review how game semantics has been used to characterize the sequential functional processes, leading to an intensional characterization of the natural class of higher-order computable functions. This solves a problem studied by Kleene and Gandy, and has also had a significant impact on work in Computer Science on semantics and verification, relating e.g. to Dana Scott's Logic of Computable Functions. In a broader context, we can regard game semantics as a first step towards developing a positive theory of intensional structures with a robust mathematical structure, and finding the right notions of invariance for these structures.