

Quantitative techniques are emerging in different areas of computer science to face the challenges of resource aware computation. This talk introduces “quantitative type systems”, a formal tool that provides a clean theoretical understanding of the use of resources in higher-order programming languages.

We will first discuss the main principles and properties of quantitative types, covering computational aspects, as well as semantical ones. We will then present several applications, mainly related to characterization of normalization in programming languages, as well as inhabitation and observational equivalence.