

**CHENNAI – PONDICHERRY**

**Systematic Elaboration of Scalability Requirements through Goal-Obstacle Analysis**

**Abstract**

Scalability is a critical concern for many software systems. Despite the recognized importance of considering scalability from the earliest stages of development, there is currently little support for reasoning about scalability at the requirements level. This paper presents a goal-oriented approach for eliciting, modeling, and reasoning about scalability requirements. The approach consists of systematically identifying scalability-related obstacles to the satisfaction of goals, assessing the likelihood and severity of these obstacles, and generating new goals to deal with them. The result is a consolidated set of requirements in which important scalability concerns are anticipated through the precise, quantified specification of scaling assumptions and scalability goals. The paper presents results from applying the approach to a complex, large-scale financial fraud detection system.