**CHAPTER - 1**

**INTRODUCTION**

**1.1 Motivation and Goal:**

With the advancement of technology, machine learning and deep learning methods are being applied in numerous fields. Among these Human activity recognition (HAR) has been the one of the most significant topics in the active research field. Human activity recognition intends to monitor, recognize the activity of a person based on series of observations and surrounding environment. In easy words, HAR technology is used in recognizing human daily activities, from simple activities like standing, sitting, walking upstairs, running to complex activities like cooking while standing, watching TV while sitting or lying [1].

Human activity recognition, due to availability of devices and wearable sensors in low cost has become an integral part of people’s daily lives and is being applied broadly in common domains like health management - elderly monitoring, disease prevention, rehabilitation, in the idea of smart cities – domestic activity monitoring. Furthermore, HAR is applied in security concerns like through individual activity monitoring solutions, crowd anomaly detection. Besides, wearable and inertial sensors combined with embedded systems are being used in sports activities [2,3].