

# SensAKitchen: Contextualizing Kitchen Activities with IoT-Enabled Event Identification

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## Abstract

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### Abstract:

This study demonstrates how environmental sensors are effectively used to find the context of different types of cooking activities. This work was conducted in a household kitchen with proper ventilation and using a sensor array comprised of PM2.5, PM10, CO2, Temperature and Humidity. Several machine learning models were used to analyze the results. The overall accuracy obtained is 95% for PM2.5, 90% for PM10, 90% for CO2, 95% for Temperature and 95% for Humidity respectively. These results show the efficiency of the proposed system to accurately identify and contextualise various kitchen activities. This system has the potential to promise to enhance the remote monitoring of kitchen activities.

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### I. Introduction

Context is defined as information that can describe the state of entities (individuals, locations, or objects) and is relevant to the interaction between a user and an application, encompassing both the user and the application. In other words, Context refers to the information used for differentiating the circumstances surrounding an entity, where the entity may be a person, a place, or an object [1]. A context-aware system [2] is described as one that gathers data, comprehends it to characterise the situation, and offers decision-making guidance by taking information as input and producing a corresponding response as output. We may define context awareness as using context to provide relevant services and information to the user.

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