The paper, titled "Smoking Activity Recognition Using a Single Wrist IMU and Deep Learning Light," is authored by Patricio Rivera Lopez, Sangmin Lee, Edwin Valarezo Añazco, Kyungmin Byun, and Tae-Seong Kim from the Department of Biomedical Engineering, College of Electronic and Information, Kyung Hee University, Republic of Korea. Edwin Valarezo Añazco is also affiliated with the Faculty of Engineering in Electricity and Computation, Escuela Superior Politécnica del Litoral, Guayaquil, Ecuador.

The authors aim to address the significant negative health implications of smoking, including lung cancer, chronic obstructive pulmonary disease, and coronary heart disease. They highlight the need for a proactive system to help smokers quit by providing immediate feedback when they engage in smoking behavior.

To this end, they propose a system that utilizes a wristband equipped with a single Inertial Measurement Unit (IMU) sensor and a smartphone app that uses artificial intelligence powered by a Recurrent Neural Network (RNN). This system is designed to detect the act of smoking by identifying specific hand gestures associated with smoking, differentiating them from similar actions such as eating and drinking. Once the smoking activity is detected, the system provides active vibration feedback to the user.

The system was subjected to a two-step classification process: The General model classifies the measured activities into Activities Daily Living (ADL) and Hand Gestures Activity (HGA), and the Expert model further categorizes HGAs into smoking, eating, and drinking. The system achieved a smoking activity recognition accuracy of 91.38%.

The authors also discussed related works, such as a smoking detection system developed by Parate et al. in 2014, which relied on a nine-axis IMU sensor and hand-crafted features, and a Dynamic Time Warping-based smoking detection algorithm developed by Akyazi et al. in 2017, which used a wrist accelerometer.

Unfortunately, the paper's content has been truncated, so a more comprehensive analysis isn't possible with the given information.