

Voice Automated Smart Headgear

Dr. Suma¹, Ananya P S², Meghashree C Shekhar³, Karthik Matala⁴, Ramesh R⁵

Professor, HOD, Department of ECE¹

Students, Department of ECE²⁻⁵

Vidya Vikas Institute of Engineering and Technology, Mysore

sumavvietec@gmail.com, ananyaps58@gmail.com, meghashreecs98@gmail.com

karthiksmatala@gmail.com, rameshrnayak31@gmail.com

Abstract: *A smart headgear is an advanced piece of headgear designed to enhance safety and functionality for various activities, including motorcycling, cycling, and industrial work. Utilizing modern technology, smart helmets integrate features such as communication systems, sensors, and health monitoring to provide a comprehensive safety solution. The core of a smart helmet typically includes a micro-controller connected to various sensors, such as accelerometer, gyroscopes, and heart rate monitors. Our project focuses on reducing the manual interruptions for a safe ride by installing voice automation for visor movement in the rider's headgear as well as send an SOS or emergency call on detecting an accident through fall detection sensor this will include components such as AI voice modulator, ESP 32, stepper motor, microphone GSM module & Bluetooth chip in industrial applications, smart headgear can enhance worker safety by monitoring environmental conditions, such as toxic gas levels, and alerting wearers to potential hazards.*

Keywords: Smart helmet, safety, voice automation, accident detection, IoT, wearable technology, rider safety, industrial safety, sensors, AI, ESP32

