IoT and AI-enabled Smart Safety Helmets

Applications

– Protective head-gear equipped with AI and IoT-enabled which will allows users to track and monitor riders.

– Voice-and-swipe activated google assistant for on-the-go queries, easy access to calls.

– Helmet ensures rider to prevent break line-of-sight while commuting.

– Detects impact and sends distress text as well as location to contacts.

– Industry applications in the delivery, logistics, sporting, firefighting, bike-sharing sector as well as military purposes.

Inventor(s)

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Categories of this invention

▶ Transportation

▶ Computer Science and IT (AI-ML)

▶ Wearable Devices

▶ Problem Addressed

Road accidents contribute to nearly 1.3 million deaths, and over 30 million hospitalizations every year, globally, with the impact more pronounced in Asian countries. This invention addresses the problem with a smart helmet with lightweight, modular technology that fits inside regular motorcycle helmets. It significantly increases the ease of locating an administering medical aid to an accident victim right after a crash, and also gamifies safe driving to make the rider drive better. This invention has broad consumer and business applications to ensure road safety.

▶ Intellectual Property

A MULTIFUNCTIONAL SMART SAFETY HELMET

Applicant(s) – Shamik Guha, Md. Bilal Shakil, Sayan Tapadar, Anirban Datta Gupta

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▶ Technology

The inventors of this technology developed a smart helmet to collect real-time data and help to reduce operational and personal risk while providing and encouraging enhanced road safety.

Key Features:
✓ Capacitive Impact Sensing to detect helmet worn or unworn conditions.
✓ Wireless connectivity to allow the helmet to communicate with a computing device (Smart Phone).
✓ Swipe-enabled interface and audio navigation
✓ Summarized ride statistics - like location, wear statistics, speed, and impact
✓ Emergency SOS alerts with ride details are shared with trusted contacts, as is relevant medical history incase of an impact

Smart Connectivity Modules

▶ Advantages

• Gradual betterment in rider behaviour through reward-based incentivisation and gamification

• Compact analytics/audio module

• Swipe-enabled User Interface

• Smaller & Lighter than only-audio modules

• High durability

• Cost Effective, most inexpensive among similar products around the world

▶ Potential Value

1 The global smart helmet market is expected to grow at a CAGR of 18.6% during 2019 - 2025.

2 The emergent two-wheeler EV sector is likely to accelerate demand for smarter wearable headgear alongside smarter vehicles

3 Government mandates for road safety are an important driving factor, as the product is designed to reward safety

4 Expansion into south Asian markets presents untapped billion-dollar opportunities due to rising per-capita income and large proliferation of two-wheelers

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