**IoT-Enhanced Drowsiness Detection System for IT Employees: Boosting Productivity with AI and Wearable Technology**

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**Abstract:**

The "IoT-Enhanced Drowsiness Detection System for IT Employees: Boosting Productivity with AI and Wearable Technology" is a cutting-edge project that combines advanced technologies to address the issue of employee drowsiness and its impact on productivity in the IT sector. This innovative system integrates Internet of Things (IoT) elements, Artificial Intelligence (AI), and wearable technology to create a comprehensive solution. By harnessing the power of these technologies, the system addresses drowsiness-related challenges in the IT sector, promoting both productivity and safety among employees.

**Existing Model:**

Existing models for employee drowsiness detection encompass a range of technological approaches that leverage advancements in AI, machine learning, computer vision. These models are designed to identify and mitigate instances of drowsiness in real-time work scenarios, enhancing employee safety and productivity. Variations in lighting conditions, angles, and occlusions can impact accuracy. These models may struggle to perform well in situations where the face is partially obscured or the camera quality is low

**Proposed Model:**

Our Proposed model aims to enhance the productivity of IT employees by developing a real-time drowsiness detection system using Artificial Intelligence (AI) and IoT. The system utilizes a basic webcam to monitor the individual's eyes and mouth for signs of drowsiness. If indicators like yawning and closed eyes are detected, the system activates an alarm to alert the employee. Additionally, a wristband is employed to vibrate and wake up the person. The system employs machine learning and image processing to focus on the facial area of interest. The project's primary objective is to prevent productivity loss due to drowsiness and work fatigue in online employees. The process involves detecting the face's edge, locating eyes and mouth using a Facial Landmark Detector from the Dlib Library, and measuring the distance between the eyes and mouth to determine their status. If closed eyes and open mouth occur repeatedly, an alerting buzz and vibrating wristband are activated. The system's hardware-software combination includes RF wireless technology for communication between the laptop and wristband, enriching the project's Internet of Things (IoT) integration.

**Objectives:**

* Integrate wearable devices, such as wristbands, to provide immediate feedback and alerts in response to detected drowsiness.
* Develop an Innovative Drowsiness Detection Solution
* Create a pioneering solution that addresses drowsiness issues among IT professionals, thereby enhancing their overall productivity and work experience.

**Internal Guide Project Co-Ordinator Head of the Department**

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