**PRODUCT PROPOSAL REPORT**

**Project: AI Customer Analyzer**

**Group: 19**

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| **PRINCE2** | | | |  |
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| Author: Gunarakulan Gunaretnam (Project Manager) | | |
| Owner: Dr. Yasas Jayaweera (Project Executive) | | | | |
| Client: DreamSpace (Private) Limited  Project Manager: Gunarakulan Gunaretnam (2208408)  Startup Manager: Sangeetha Thangavadivel (2135801)  Risk Manager: Haritha Thavarajah (2211320)  Schedule Manager: Mathumitha Arasakulasoorian (2211336)  Quality Manager: Delaxsan Raj Sathiyanesan (2211294) | | | | |
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**Introduction:**

DreamSpace is a company looking to build an AI-powered computer vision-based customer analysis system that can monitor and gather data about its customers. The system will be placed at the entrance of the company's premises to detect customers as they enter and collect information such as the number of customers, their age range, gender, and emotions. It also analyzes real-time audio to calculate the negative and positive words used by sales employees when talking with customers to improve their communication skills in the future.

**Objective:**

This project aims to develop an AI-powered computer vision-based customer analysis system that will perform the essential duties of a security guard, including welcoming visitors, counting them, and predicting their age range, gender, and mood. The system should also remind visitors to wear a face mask if necessary.

* To build an AI-powered system that can accurately count the number of customers entering DreamSpace's premises.
* To detect the age range of customers.
* To detect the gender of customers.
* To detect the emotions of customers.
* To detect the race of customers.
* To monitor sales employees' vocals to improve their professional communication skills.
* Provide a backend panel for DreamSpace to view and analyze the gathered data.

**Scope:**

The scope of this project includes the development of an AI security bot that uses computer vision and machine learning to perform the following tasks:

* Welcome visitors as they enter the premises in Tamil, Sinhala, English
* Count the number of visitors.
* Predict the age range, gender, and mood of visitors using computer vision and machine learning algorithms.
* Provide reminders to visitors to wear a face mask if necessary.

**Features:**

* **Visitor Counting:** The system should accurately count the number of visitors entering.
* **Age, Gender, Mood, and Race Prediction:** The system should use computer vision and machine learning algorithms to predict the age range, gender, and mood of visitors.
* **Mask Reminder:** The system should remind visitors to wear a mask if necessary.
* **User-friendly Interface:** The system should have a user-friendly interface that allows easy interaction with visitors.
* **Backend Panel:** To visualize the analyze gathered data
* **Audio Monitoring:** Monitor sales employees’ vocals to improve polite communication skills.

**Technical Requirements:**

* The system should be developed using Python, computer vision, and machine learning libraries such as OpenCV and TensorFlow.
* The system should use deep learning algorithms such as convolutional neural networks (CNNs) for age, gender, and mood prediction.
* MERN Stack for web panel development.

**Delivery:**

The project should be delivered within ten weeks from the start date, with regular updates and progress reports provided to the client.

**Conclusion:**

The AI Security Bot for Visitor Analysis and Mask Reminder will provide a user-friendly and efficient solution for counting visitors and predicting their age range, gender, and mood. The system will perform the essential duties of a security guard, freeing up staff time and resources and providing valuable customer analysis data. The mask reminder feature will also help ensure the health and safety of visitors and staff.