Enterprise Employee Operations management with Deep NeuralNetwork

Cloud based Operations management platform that helps provide visibility in operations of a company on a real time basis.This application helps employers to view operations holistically and identify opportunities for collaboration & optimization across Enterprise.It helps to identify how all teams spend time that impacts customers and enterprise.

Automated Time Tracking: Cloud-based solution for attendance and timesheets tracking of employees without any human intervention. It keeps a record of employees log in & log out time, including their actual working, idle, meeting, productive and unproductive time during the day.Track employee work and break times using **deep learning** and can Identify actual time spent on project and task.Employee activities like sleeping,usage of phone can also detect by analysing webcam video.

Predicting Workplace Absenteeism: using Deep Learning algorithms that can predict the behavior of employees towards punctuality at workplace.

Application & URL Tracking: With activity tracking, get the record of activities performed during the day, this can be achieved with the help of application & URL tracking. These logs are helpful for monitoring the productivity as important apps, URLs, files can be tracked and highlighted under productive & unproductive logs

Productivity Tracking:evaluate or track productivity of employees can be done by analyzing actual activity done with time versus expected outcomes from them.

Project Time Tracking: Time tracking on the projects and tasks is quite difficult .can easily record hours spent on project and task by linking the files or URLs. It will help in generating the invoice to the clients with the actual working hours thus the employer can easily identify the loss and profitable projects.

Alert Emails: For the instant reporting of the team set alerts, for the unproductive activities like using pen-drive, unproductive apps and blacklisted URLs (facebook, instagram, youtube etc). This will help in identifying the irrelevant activities quickly.

Technologies

language -python
tools and sdks- opencv , sklearn ,Django ,Tensorflow
Database:- Amazon DynamoDB

features of proposed system

- face recognition
- employee identification
- Track employee work and break times
- Employee activities log
- **Auto Alert Emails**
- **URL Tracking**
- actual working time calculation
- Productivity tracking
- Actual project working hour calculation
- Auto invoice generation
- Auto salary calculation
- Auto login/logout time marking
- Brake time calculation
- **Predicting Workplace Absenteeism**
- Live video recording

Functions of proposed system

Application & URL Tracking: Instant reporting of unproductive activities like using pen-drive, unproductive apps and blacklisted URLs (facebook, instagram, youtube etc).this software maintains a detailed record of the programs launch, how often employee run each one, when a program was run last, and how it was used. The software keeps track of all internet activities including browsing history, pages visited, visit time along with username.employers can always keep record of what their employees have been surfing and ask them not perform any unwanted internet activity

Proposed system

Cloud based Operations management platform that helps provide visibility in operations of a company on a real time basis.This application helps employers to view operations holistically and identify opportunities for collaboration & optimization across Enterprise.Business disruptions can impact organizations of any size in any location. From weather, to power outages, political events or even virus outbreaks, every organization needs to develop a business continuity plan to ensure its business operations can continue, no matter the disruption.A critical component of that business plan is to ensure that users remain productive while maintaining the necessary level of security and control over user access to corporate resources. This system enable seamless workforce productivity, giving employees the flexibility to work from anywhere, all while keeping your apps and information secure.Empower temporary employees with desktops on demand.employer can enable secure access to apps and data from anywhere globally, ensuring each vendor has the right desktop for the right job.

Analyze productivity, effectiveness and focus with insightful charts for individuals, teams and the entire organization. high-quality screenshots are captured at custom intervals, which is a smart way to keep an eye on employee's activity.get the record of activities performed during the day, this can be achieved with the help of application & URL tracking.Face Recognition Attendance is One Solution for tracking Attendance of On-Premise and On-Field staff. It is easy to deploy and simple to use. It comes with Geo-Location recording for On-Field staff Attendance and a Leave Management System. the ability to Manage Employee On-boarding and Off-boarding and generating Attendance Reports on a real-time basis. It keeps a record of employees log in & log out time, including their actual working, idle, meeting, productive and unproductive time during the day.Track employee work and break times using **deep learning** and can Identify actual time spent on project and task.Employee activities like sleeping,usage of phone can also detect by analysing webcam video. Managers can measure employee productivity through activity level, daily and weekly timesheets, reports and random screenshots. Calculating billable and non-billable hours is super easy. It is compatible with both mobile and desktop. manger can also keep an eye on remote employees through GPS location tracking.Dedicated Employee Portal for Employees to track their own Attendance and for Manager's to view Team Attendance status and download reports.

For the instant reporting of the team set alerts, for the unproductive activities like using pen-drive, unproductive apps and blacklisted URLs (facebook, instagram, youtube etc). This will help in identifying the irrelevant activities quickly.manger will get notification when suspicious activity of a specified severity level reaches a defined threshold. can define alerts for permitted requests and blocked requests of each severity level.Auto Suspicious Activity Reporting provides manger level user

with the option to report unrecognized activity from an account activity email notification. Absenteeism can have a severe impact on the workplace. This system using Deep Learning algorithms that can predict the behavior of employees towards punctuality at workplace.The aim of this paper is to identify and evaluate the appropriate ML algorithms to predict and analyses absenteeism at workplace. The dataset taken into account consists of some attributes such as: age, education, employment category, day, month, length of service etc.It is difficult to analyse the pattern in human behaviour. Machine learning helps us to identify hidden, interesting patterns in human behaviour. Productivity of an organization improves when a staff provides dedicated full time work.

Study of similar works

Available employee monitoring applications allow employees and freelancers to manually start a clock when they begin working on an assignment for employers. The application will take computer screenshots randomly or at intervals assigned by the employer, which can be reviewed online, as evidence that work is being performed.Employee attendances are marked based on this time logs.Employees can easily manipulate this system since there is no video based analytics are there. Remote workforces are becoming increasingly common. Quickbooks time tracking software is one of the sample works .Here Employees can clock in or out with just one click. Take a break, change job codes, or add timesheet details instantly. In this kind of application employers cannot use their favourite project management tools integrated with this system.this application allows to Connect customers favorite accounting or payroll software to automatically sync accurate employee time tracking data for payroll and invoicing

Existing System

Through different digital tools, employee monitoring gives employers a read on employees' activity and productivity. Using various types of software, employers can track how employees are using their time each day. Not only did many organizations quickly shift to remote work at the onset of the COVID-19 pandemic, but many of those employers have decided to keep that structure moving forward.As many businesses have found out, it is difficult to know if there remote employees are actually working.Most of this existing tools have inbuilt project management tools ,so the customer should migrate from there existing pm tools .some use Google Sheets to track there part-time and remote workers. It's not glamorous, but they have created simple forms that folks fill in daily, highlighting their hours and what work they've completed. By integrating all of that into one file, they are able to see progress as well as budget for upcoming weeks. Just because employees are manually starting and stopping the timer means that they can exaggerate their working hours .Whenever an employee accesses unproductive sites like these, the app automatically sends them a pop-up asking them if they’re still working. This little nudge is usually enough to get them off the social media site and back to work.When there’s been no keyboard or mouse activity for three minutes, existing applications automatically assumes that the worker is on a break and pauses the timer.The attendance report gives you a list of absentees in the week with their reasons for absence. It’s a simple way to keep stock of who’s been missing from work recently.

Drawbacks of existing system

- No personal identification systems used for marking attendance, like face recognition/fingerprint identification .so a person can easily manipulate this attendance system
- When there's been no keyboard or mouse activity for three minutes, existing applications automatically assume that the worker is on a break, normally this is not proper approach.since some employees like mobile app testers/marketing employees need to use mobile phones during their working time.so they may lose their attendance. If they disable this facility employees may missuese this facility.
- No deep learning techniques used to analyse sleeping,usage of phone,checking employee behaviour
- No machine learning techniques to Predicting Workplace Absenteeism by analysing employees behaviour
- Can't integrate with existing project management tools
- Companies using google sheets for tracking will not get proper reports and dashboard
- Url blocking and tracking of unusual activities is not available in most of the existing softwares
- Geo tagging facility is not available,this will help employers to track their employees