

# A CENTRALIZED APPROACH TO REDUCING BURNOUTS IN THE IT INDUSTRY USING WORK PATTERN MONITORING USING ARTIFICIAL INTELLIGENCE

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**Abstract** - IT industry burnout is interlinked with cultural, individual, physical, or emotional exhaustion, and social factors, the resolution of which requires the technology-driven trends in the workplace and the technologies such as work pattern monitoring and Artificial Intelligence that can deal with large amounts of data.

**Keywords** - Cultural, Individual, Physical, or Emotional Exhaustion, Social Factors

## I. INTRODUCTION

IT industries face a gigantic problem i.e., employee burnout which can charge a firm loss in numerous hours and thousands of dollars every year. We will discuss about the centralized approach, 'Cloud Server Burnout Detection Mechanism' that will help IT industry managers and HR specialists to manage the emotional state of the employees, understanding their real state using Sentiment Analysis, and prevent unwanted attrition using Clustering Qualitative Feedback (Henderson, 2019). The more advanced IT companies use work pattern monitoring using Artificial Intelligence to make their employees work more professionally. The attempts to understand the development and leadership, on the effects of work pattern monitoring using Artificial Intelligence technology on information technology organizations (Wayne F Cascio, Ramiro Montealegre, 2016). It will also tell the employee that it is time to take the rest and relax of your day off, for the advantage of their mental health. In this approach, the data of the employees will be stored on a cloud server with government compliances.

The software system should use the feature of 'Chatbot' because it will simulate instant connections with users automatically based on a set of predefined triggers, conditions, or events. The further understanding of how the Cloud Server Burnout Detection Mechanism Software works and operates. The system will provide the work pattern monitoring via the 'Firebase Real-Time Database' which will synchronize the employee burnout data to improve the employee experience. The research paper also illustrates the advantages and disadvantages of the proposed software solution.

## II. ANALYSIS

Cloud Server Burnout Detection Mechanism Software is a helpful solution for the IT industries to

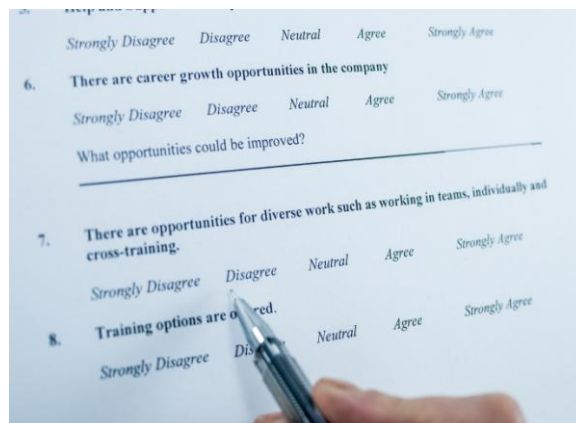
control employees during physical, emotional exhaustion, or stressful interactions, and thus helping them to perform better. The research paper attempts to understand the working of the Cloud Server Burnout Detection Mechanism Software.

### How does Cloud Server Burnout Detection Mechanism Software work?

Cloud Server Burnout Detection Mechanism helps to perform pattern recognition and computational learning to better understand employee's behaviour. The technique uses the concept of Sentiment Analysis and Clustering Qualitative Feedback to detect employee performance. The Burnout Detection software has the following features:

### Survey and A Self-Report Questionnaire

A survey and a self-report questionnaire were given to employees to classify the feelings and sentiments related to an entity's work atmosphere. Different individual and organizational risk factors were included in the survey, including having deprived personality-esteem, newer grownups with an uncompromising worldview, quixotically high prospects, having monetary subjects, heavy assignment, conflicts with co-workers, effort-reward imbalance, understaffing, rapid institutional changes.



### Sentiment Analysis

Employee engagement scores are returned after performing the mechanism that can be monitored over time. As Sentiment analysis software is already integrated with the system so looks at all employee survey and questionnaire responses and rapidly verifies the ‘why’ behind the dimensions engagement scores. The sentiment analysis surveys can be clustered into topic areas or themes; the process is termed as ‘Clustering Qualitative Feedback’. The sentiment and text analytics mechanism will use the algorithms of work pattern monitoring and artificial intelligence to train the data and recognize the topic areas as employee benefits, compensation, training level, systems, staffing, career growth, work-life balance, management, teamwork, and appreciation. After the topic areas are identified, everyone’s statement from a variety of surveys can be labelled with the appropriate theme, and then assigned a sentiment i.e., positive, negative, or neutral.

The IT industry specialists within the corporation can act after reviewing the report and on the perceptions from the AI-driven data. After viewing the insights, IT industry specialists can understand what influences employee contentment and then take action to make sentiment more optimistic where applicable.

### AI-enabled wearable tools

AI-enabled wearable tools, wristwatches with AI sensors with voice and image recognition, and deep learning models are also implemented in the solution that will monitor and analyze the IT employee's emotions and behaviour.



### AI chatbot

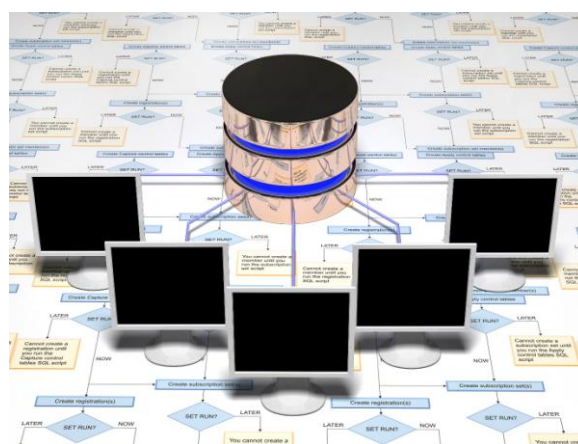
The software solution also provides the capability of a chatbot that can converse with an employee at work to help them through anxiety, burnout, stress, and hopelessness. It did not require a long time while chatting with a bot. Burnout Detection Mechanism Software provides an opportunity to talk with a bot for just a few minutes while leaving your space.

The chatbot understands employee queries through work pattern monitoring and natural language

processing and gives bright responses to them. It will simulate instant connections with users automatically and can yield extremely effective results based on a set of predefined triggers, conditions, or events thus preventing problems from arising in the future. It will eliminate the unnecessary amount of work and take on a substantial load off employees.

### A Centralized Firebase Real-Time Database

A log of a regular basis engagement scores of the employees are tracked over time and thus the data of the employees will be stored on a cloud server with government compliances. The ‘Firebase Real-Time Database’ will synchronize the employee burnout data and the log and provides a real-time view interface for the IT specialists to view the state of the employees to improve their experience.



### Findings

The research organized for Reducing burnouts in the IT industry is both qualitative and quantitative. For secondary data, articles, journals, and research papers were searched. The search for the conferences, scientific journals, workshops proceeding was performed on the following electronic databases: IEEE Xplore, ACM Digital library, and Science Direct. One of those most complicated and sophisticated issues faced by the IT industry is workplace burnout, mental health. IT specialists know the fact that ensuring reduced burnouts is essential in producing a positive employee understanding.

The research has shown that based on employee experience, present-day workers assess their prospective jobs, and the techniques of Artificial Intelligence will help to transform reduced burnouts in the IT industry. Burnout checking frameworks upheld by AI calculations can likewise be utilized in enrolment measures and to oversee workers. Applying AI techniques in diminishing burnout can likewise give financial advantages, for example, help to decrease representative turnover and improve general working conditions. Several researchers argue that burnout can happen as an employee’s undesirable

consequence of prolonged stress or continuous imbalance between appropriate coping resources and chronic stress-related with the collaboration of environmental and personal factors. A survey has been organized in which 10,000 IT employees from 30 tech companies are selected to discover the main factors of employees during physical, emotional exhaustion, or stressful interactions in their organization. Cloud Server Burnout Detection Mechanism Software is used to view the overall outcomes of the survey. The software uses sentiment analysis and natural language processing (NLP) to understand an employee's input and produce personalized answers. AI's, and specifically work pattern monitoring, probable to analyze large volumes of datasets and obtain significant insights is proving helpful in reducing the burnout in the IT industry.

The conclusions of the survey revealed that:

- 22.9% of the IT employees argue that unclear direction and poor leadership is the number 1 issue for employee burnout.

- 19.4% of the IT employees argue that work overload supports employee burnout.
- 17.5% of the IT employees argue that a noxious workplace environment is a reason for employee burnout.
- 15.4% of the IT employees argue that career growth and poor control is a reason for employee burnout.

25 companies out of the 30 have a burnout proportion of 50% and just 5 have an employee burnout rate of fewer than 50%. Empowering more noteworthy wellbeing and more help for psychological well-being in the working environment is both a financial and good basic for organizations. As indicated by the World Health Organization (WHO), for each \$1 spent to scale up psychological well-being activities, there is a \$4 sway on better wellbeing and efficiency. Many IT industry organizations have dedicated to promoting a better worker experience, with a specific emphasis on work pattern monitoring using artificial intelligence. It is revealed that the IT industries might have a serious employee burnout problem.

What is the main source of employee burnout at your current workplace?

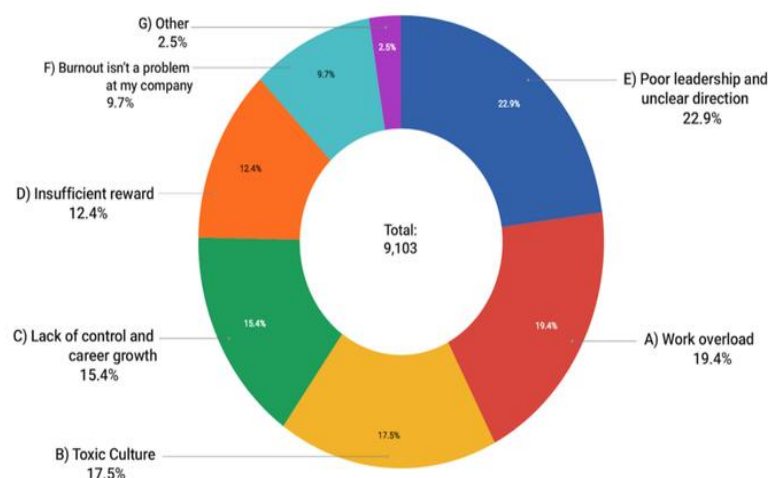


Figure 1. A Survey Result of Determining the Main Source of Employee Burnout At 30 Tech Companies.

Estimation investigation can equally be developed to improve the association's position both as a business and as a brand. Previous representatives and up-and-comers may leave unknown surveys that will address major issues, for instance, inappropriate behaviour, work dangers, and separation, just as unreasonable treatment, stress, helpless administration, inconceivable remaining burdens, and different drivers of negative worker experience and additionally burnout. Breaking down these audits with assumption examination can yield a fuller image of representative feeling that can be managed by IT experts (Wayne F Cascio, Ramiro Montealegre, 2016).

### Advantages of the Cloud Server Burnout Detection Mechanism Software

Information Technology industries should associate and integrate AI software applications and techniques for the association as fitness and employee experience tools to track their performance. The work pattern monitoring using AI will present a solution in the form of a centralized approach the 'Cloud Server Burnout Detection Mechanism Software'. Here are enlisted few advantages of using the software solution in IT organizations:

- The software analyzed hundreds of thousands of employee data in real-time by keeping all the data of employees siloed and anonymized across the

organization, dealing with the most serious situations such as “depression,” “mental health,” “anxiety,” “burnout” and others.

- As it is the Cloud-based infrastructures support software that will provide environmental proactivity and powering virtual services such as chatbot facility to improve the energy efficiency of employees.
- The software uses AI chatbots for psychological purposes to reduce employee workload and will take on a substantial load off employees.
- Cloud Server Burnout Detection Mechanism Software can make IT organizations more desirable to prospective employees and maintain the individuals they appoint for much longer.
- The IT industry specialists within the corporation can act after reviewing the sentiment analysis report and on the perceptions from the AI-driven data. After viewing the insights, IT industry specialists can understand what influences employee contentment and then take action to make sentiment more optimistic where applicable.
- Employees will be appreciative that work pattern monitoring using Artificial Intelligence works well to keep them contented and the IT industry generally will earn the benefits.
- The hardware products such as the AI-enabled wearable tools, wristwatches with AI sensors are also implemented with the software solution that will monitor and analyze the IT employee emotions and behaviour. Wearable devices can detect a worker’s productivity and it will yield desirable outcomes.
- Using the outcomes of the data analytics from employee movements, mood, sentiments, speech, and voice patterns, the Cloud Server Burnout Detection Mechanism Software with the help of AI-enabled wearable tools and wristwatches tools can also offer relaxation so the IT employees can take rest or when they are assuming unhealthy work designs.
- The sentiment and text analytics mechanism will train the data and recognize the topic areas as employee benefits, compensation, training level, systems, staffing, career growth, work-life balance, management, teamwork, and appreciation.
- The ‘Firebase Real-Time Database’ will synchronize the employee burnout data and the log and provides a real-time view interface for the IT specialists to view the state of the employees to improve their experience.

#### Disadvantages of the Cloud Server Burnout Detection Mechanism Software

Representative burnout is anything but a private matter. It is a hierarchical one that influences all aspects of your IT business from lost representative profitability and turnover. While the software

solution makes it easy for IT employees to collaborate and concentrate at work, but besides several advantages, there still exists a few disadvantages. Establishing an environment of making IT workers consider that they are being continuously supervised, and will lead to overwhelming the mindset of elitism, mistrust, and poor morale. Here are enlisted few disadvantages of using the software solution in IT organizations:

- The high-level computing power is required to process large datasets of employees and extract meaningful insights.
- The hardware products if purchased for every employee will cost a lot of money.
- As the software uses AI chatbots for psychological purposes to reduce employee workload but the employees may use the chatbot for enjoyment purposes. They may spend extra time while chatting with the bot.
- As a survey and a self-report questionnaire were given to employees to classify the feelings and sentiments related to an entity’s work atmosphere; the employee may intentionally answer incorrectly in the three dimensions.
- Employees may think that their confidentiality has been violated or devalued.
- If monitoring of the employees seems disturbing, it may become tricky to maintain employees in the organization.
- Keeping track of the employee's mental health can indicate a lack of faith, which leads to reduce employee productivity and morale and can breed resentment.
- Employers may feel that the employees are mentally or emotionally disturbed after analyzing the log of the centralized database.
- Most IT employees are not having their working day so thoroughly examined.

### III. CONCLUSION

After reviewing the innovations in the technology, the research article considers the effective solution in reducing burnouts in the IT industry using work pattern monitoring using Artificial Intelligence through a centralized approach. ‘Cloud Server Burnout Detection Mechanism’ is an approach that will help IT industry managers and HR specialists to manage the emotional state of the employees, understanding their real state using Sentiment Analysis, and prevent unwanted attrition using Clustering Qualitative Feedback and make IT organizations more desirable to prospective employees. A survey has been organized to review the burnout ratio of IT companies and it was revealed that 25 companies out of the 30 have a burnout proportion of 50% and just 5 have an employee burnout rate of fewer than 50%. Artificial intelligence

using work pattern monitoring can be influential in helping employees map out a possible professional pathway. The research paper inspects the AI-driven technology tendencies in the IT industry and presents an indication for their impression on the physical state of well-being, both negative and positive. Cloud Server Burnout Detection Mechanism uses the Sentiment Analysis and Clustering Qualitative Feedback to help the IT workers understand what they need to have already and what the skills they need to develop to be promoted actively. The product arrangement likewise gives the capacity of a chatbot that can talk with a representative at work to help them through tension, burnout, stress, and sadness. Applying the proposed software solution in reducing employee burnout can also deliver socio-economic advantages such as improve general working conditions and help to lessen employee staff turnover.

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