



Industrial Internship Report on " Support Chat / Help Desk Website (Full Stack)"

Prepared by
[Rakshit Sunil Sonone]

Executive Summary

This report provides details of the Industrial Internship provided by upskill Campus and The IoT Academy in collaboration with Industrial Partner UniConverge Technologies Pvt Ltd (UCT).

This internship was focused on a project/problem statement provided by UCT. We had to finish the project including the report in 6 weeks' time.

My project was (Tell about ur Project)

This internship gave me a very good opportunity to get exposure to Industrial problems and design/implement solution for that. It was an overall great experience to have this internship.

**TABLE OF CONTENTS**

1	Preface	3
2	Introduction	4
2.1	About UniConverge Technologies Pvt Ltd	4
2.2	About upskill Campus	8
2.3	Objective	10
2.4	Reference	10
2.5	Glossary.....	10
3	Problem Statement.....	11
4	Existing and Proposed solution	12
5	Proposed Design/ Model	13
5.1	High Level Diagram (if applicable)	13
5.2	Low Level Diagram (if applicable)	13
5.3	Interfaces (if applicable)	14
6	Performance Test.....	15
6.1	Test Plan/ Test Cases	15
6.2	Test Procedure.....	15
6.3	Performance Outcome	15
7	My learnings.....	16
8	Future work scope	17



1 Preface

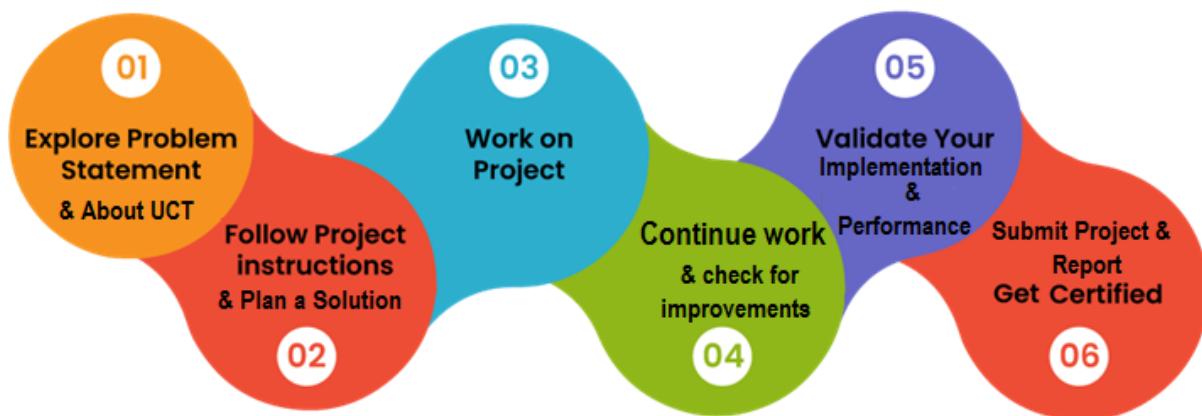
Summary of the whole 6 weeks' work.

About need of relevant Internship in career development.

Brief about Your project/problem statement.

Opportunity given by USC/UCT.

How Program was planned



Your Learnings and overall experience.

Thank to all (with names), who have helped you directly or indirectly.

Your message to your juniors and peers.



2 Introduction

2.1 About UniConverge Technologies Pvt Ltd

A company established in 2013 and working in Digital Transformation domain and providing Industrial solutions with prime focus on sustainability and RoI.

For developing its products and solutions it is leveraging various **Cutting Edge Technologies e.g. Internet of Things (IoT), Cyber Security, Cloud computing (AWS, Azure), Machine Learning, Communication Technologies (4G/5G/LoRaWAN), Java Full Stack, Python, Front end etc.**

IIOT Products
We offer product ranging from Remote IOs, Wireless IOs, LoRaWAN Sensor Nodes/ Gateways, Signal converter and IoT gateways

IIOT Solutions
We offer solutions like OEE, Predictive Maintenance, LoRaWAN based Remote Monitoring, IoT Platform, Business Intelligence...

OEM Services
We offer solutions ranging from product design to final production we handle everything for you..

i. UCT IoT Platform ([uct Insight](#))

UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable “insight” for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- It enables device connectivity via industry standard IoT protocols - MQTT, CoAP, HTTP, Modbus TCP, OPC UA
- It supports both cloud and on-premises deployments.



It has features to

- Build Your own dashboard
- Analytics and Reporting
- Alert and Notification
- Integration with third party application(Power BI, SAP, ERP)
- Rule Engine

The image shows a dashboard with nine charts and a rule engine interface.

Dashboard Charts:

- Row 1: Stacked Bar Chart (Status 1, Status 2), Radar Chart (Success, Failure, Error, Alert), Pie Chart (First 35%, Second 30%, Third 20%, Fourth 15%).
- Row 2: Timeseries Bars - Flat (Fire, Second), Polar Area Chart (Success, Failure, Error, Alert), Doughnut Chart (First 30%, Second 25%, Third 20%, Fourth 25%).
- Row 3: Timeseries - Flat (Fire, Second), Pie Chart (Success, Failure, Error, Alert), Bars - Chart (Fire, Second, Third, Fourth).

Rule Engine Interface:

- Left Sidebar:** Home, Rule chains (selected), Customers, Assets, Devices, Profiles, OTA updates, Entity Views, Edge instances, Edge management, Widgets Library, Dashboards, Version control, Audit Logs, API Usage, System Settings.
- Central Area:** Shows a rule chain diagram with nodes like Input, device profile, message type switch, Post attributes, Post telemetry, RPC Request from Device, RPC Request to Device, log, and save attributes.



FACTORY

ii. Smart Factory Platform (FACTORY WATCH)

Factory watch is a platform for smart factory needs.

It provides Users/ Factory

- with a scalable solution for their Production and asset monitoring
- OEE and predictive maintenance solution scaling up to digital twin for your assets.
- to unleashed the true potential of the data that their machines are generating and helps to identify the KPIs and also improve them.
- A modular architecture that allows users to choose the service that they what to start and then can scale to more complex solutions as per their demands.

Its unique SaaS model helps users to save time, cost and money.



Machine	Operator	Work Order ID	Job ID	Job Performance	Job Progress		Output		Rejection	Time (mins)				Job Status	End Customer
					Start Time	End Time	Planned	Actual		Setup	Pred	Downtime	Idle		
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i



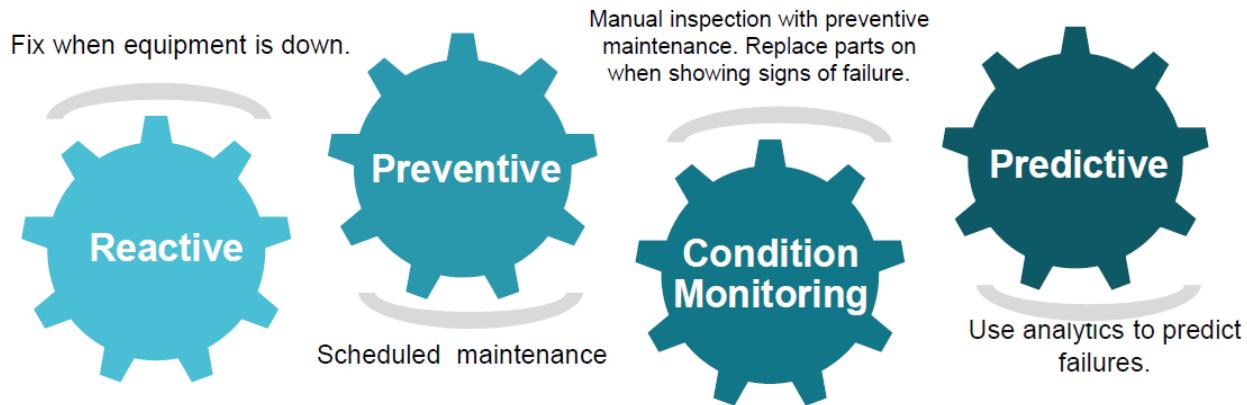


iii. LoRaWAN™ based Solution

UCT is one of the early adopters of LoRAWAN technology and providing solution in Agritech, Smart cities, Industrial Monitoring, Smart Street Light, Smart Water/ Gas/ Electricity metering solutions etc.

iv. Predictive Maintenance

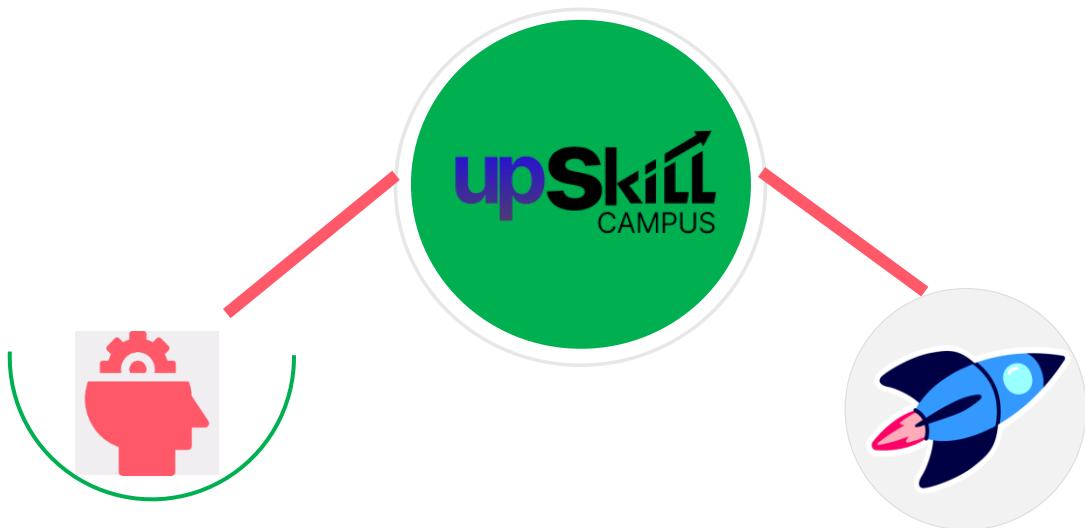
UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.



2.2 About upskill Campus (USC)

upskill Campus along with The IoT Academy and in association with Uniconverge technologies has facilitated the smooth execution of the complete internship process.

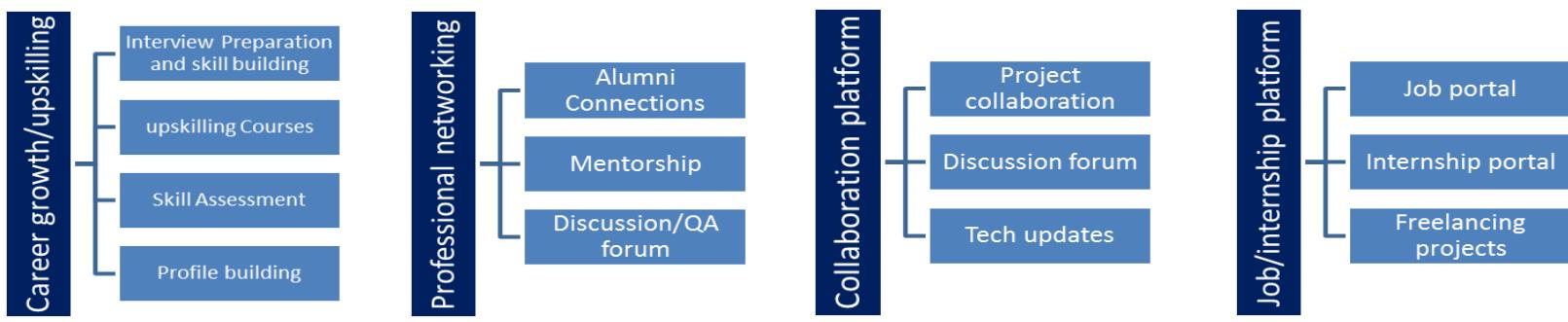
USC is a career development platform that delivers **personalized executive coaching** in a more affordable, scalable and measurable way.



Seeing need of upskilling in self paced manner along-with additional support services e.g. Internship, projects, interaction with Industry experts, Career growth Services

upSkill Campus aiming to upskill 1 million learners in next 5 year

<https://www.upskillcampus.com/>





2.3 The IoT Academy

The IoT academy is EdTech Division of UCT that is running long executive certification programs in collaboration with EICT Academy, IITK, IITR and IITG in multiple domains.

2.4 Objectives of this Internship program

The objective for this internship program was to

- ☛ get practical experience of working in the industry.
- ☛ to solve real world problems.
- ☛ to have improved job prospects.
- ☛ to have Improved understanding of our field and its applications.
- ☛ to have Personal growth like better communication and problem solving.

2.5 Reference

[1]

[2]

[3]

2.6 Glossary

Terms	Acronym



3 Problem Statement

In the assigned problem statement

In many organizations and educational institutions, users face difficulties in getting timely support for their queries and issues. Traditional support methods such as phone calls, emails, or manual registers are inefficient, time-consuming, and difficult to manage. These methods often lead to delayed responses, loss of query records, and poor communication between users and the support team.

There is a need for a centralized, web-based Support Chat / Help Desk system that allows users to submit their queries easily and enables the support team to manage and respond to those queries efficiently. The system should store all conversations securely in a database for future reference and provide a simple, user-friendly interface.

Therefore, the objective of this project is to design and develop a Full Stack Support Chat / Help Desk web application using HTML, CSS, JavaScript, Node.js, Express.js, and MySQL, which facilitates effective communication, improves response time, and ensures proper management of support requests.



4 Existing and Proposed solution

Existing System

The existing system uses traditional methods like phone calls, emails, or manual registers to handle user queries. These methods are time-consuming, unorganized, and lack proper tracking and data storage.

Proposed System

The proposed system is a web-based Support Chat / Help Desk application that allows users to submit queries through an online chat interface. The system uses Node.js, Express.js, and MySQL to store and manage chat data efficiently, providing faster response and better communication.

4.1 Code submission (Github link)

[<https://github.com/Rakshit-sonone/upskillcampus/blob/main/index.html>]

4.2 Report submission (Github link) :

[<https://github.com/Rakshit-sonone/upskillcampus/blob/main/index.html>]



5 Proposed Design/ Model

The proposed system is a **web-based Support Chat / Help Desk application** developed using a client–server architecture. The system allows users to send queries through a web interface, which are processed by the backend server and stored in a MySQL database. The admin or support team can view and respond to these queries.

The system is designed to be simple, scalable, and user-friendly, ensuring smooth communication between users and the support team.

5.1 High Level Diagram (if applicable)

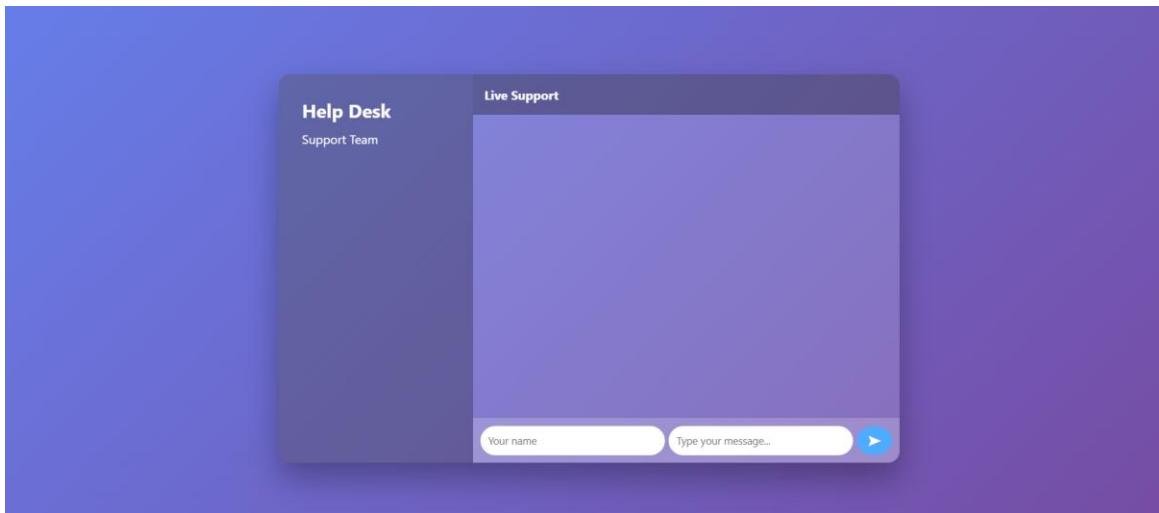


Figure 1: HIGH LEVEL DIAGRAM OF THE SYSTEM

5.2 Low Level Diagram (if applicable)

The low-level design explains the internal working of modules:

1. User enters name and message in the chat interface
2. JavaScript sends the data using `fetch()` API
3. Express.js receives the request through REST API



4. SQL query is executed to insert or retrieve data
5. MySQL database stores or returns chat records
6. Backend sends JSON response
7. Frontend updates chat interface dynamically

Low-Level Flow:

Chat Form → JS Validation → API Route

→ SQL Query → MySQL Table

→ JSON Response → UI Update

5.3 Interfaces (if applicable)

- **1. User Interface**
 - Chat input form
 - Message display area
 - Send button
- **2. Backend Interface**
 - REST APIs (/send-message, /messages)
 - Express middleware for request handling
- **3. Database Interface**
 - MySQL tables for storing chat messages
 - SQL queries for CRUD operations



6 Performance Test

Performance testing was conducted to ensure that the system works efficiently under normal usage conditions.

6.1 Test Plan/ Test Cases

Test Case ID	Description	Expected Result
TC01	Send message	Message stored in database
TC02	Fetch messages	Messages displayed in UI
TC03	Empty input	Validation error
TC04	Multiple users	Messages displayed correctly
TC05	Server response	Response within acceptable time

6.2 Test Procedure

- Start MySQL server and Node.js backend
- Open the application in browser
- Enter valid user name and message
- Submit the message
- Verify message storage in database
- Refresh page and check message retrieval

6.3 Performance Outcome

- The application responded quickly for normal chat usage



- Messages were stored and retrieved without delay
- No data loss was observed during testing
- System performance was satisfactory for small to medium user load

7 My learnings

Through this project, I learned:

- Full Stack web development workflow
- Frontend–Backend integration using APIs
- MySQL database design and SQL queries
- Server-side development using Node.js and Express.js
- Debugging and testing of web applications
- Importance of clean UI and user experience

This project helped me understand real-world web application development.



8 Future work scope

The following enhancements can be implemented in the future:

- User authentication and login system
- Admin panel for support team
- Auto-reply chatbot integration
- Chat history filtering and search
- Real-time chat using WebSockets
- Deployment on cloud serve