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Industrial Internship Report on

”Content Management for a blog”

Prepared by

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Executive Summary

This report presents the details of the Industrial Internship provided by **upskill Campus** and **The IoT Academy** in collaboration with the industrial partner **UniConverge Technologies Pvt. Ltd. (UCT)**. The internship was conducted over a period of six weeks and was focused on solving a real-world industry-oriented problem statement provided by UCT.

The assigned project, **“Content Management for the Blog,”** involved planning, creating, organizing, optimizing, and maintaining digital content for an organizational blog. The objective was to ensure consistency, quality, SEO optimization, and efficient content workflows that align with business and marketing goals.

This internship provided valuable exposure to industrial practices, content strategy, collaboration tools, and professional documentation standards. Overall, it was a highly enriching experience that strengthened both my technical and professional skills.

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1 Preface

The six-week industrial internship was designed to bridge the gap between academic learning and real-world industrial requirements. The internship emphasized practical exposure, structured problem-solving, and professional execution of tasks.

The project **"Content Management for the Blog"** focused on managing digital content effectively to improve user engagement, brand visibility, and knowledge dissemination. The internship opportunity provided by **upskill Campus (USC)** and **UniConverge Technologies Pvt. Ltd. (UCT)** was well-structured with clear milestones, weekly evaluations, and continuous mentoring.

Through this internship, I gained hands-on experience in content planning, SEO basics, documentation, teamwork, and time management. I am grateful to **upskill Campus**, **The IoT Academy**, mentors from **UCT**, and my peers for their guidance and support.

To my juniors and peers: actively participate, stay curious, and treat internships as learning platforms rather than just certifications.

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.

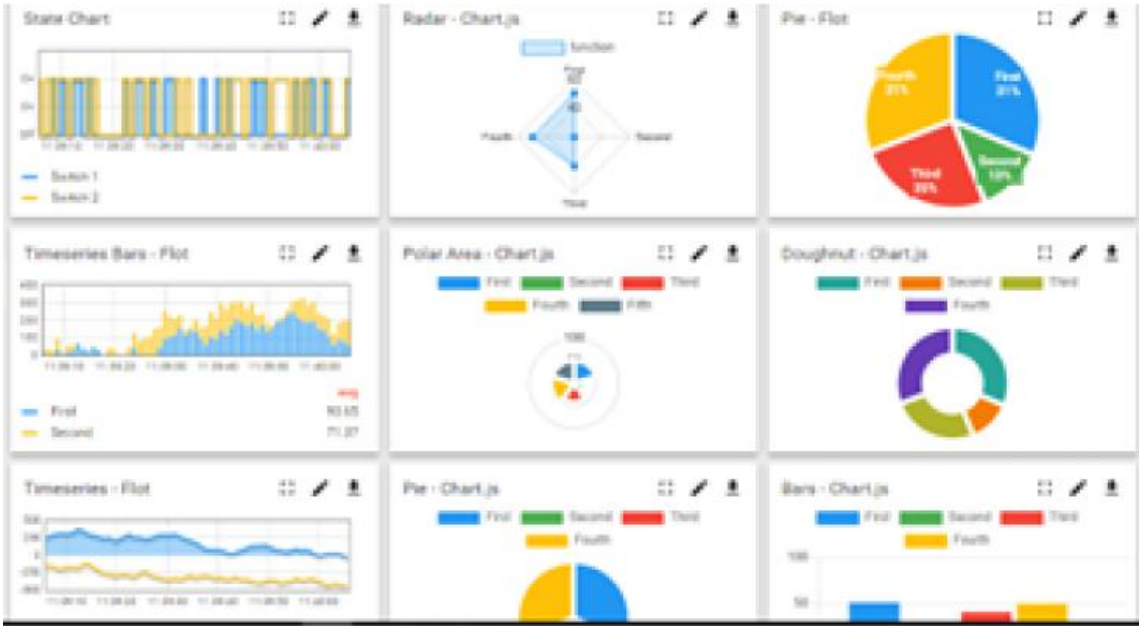
i. UCT IoT Platform (UCT Insight)

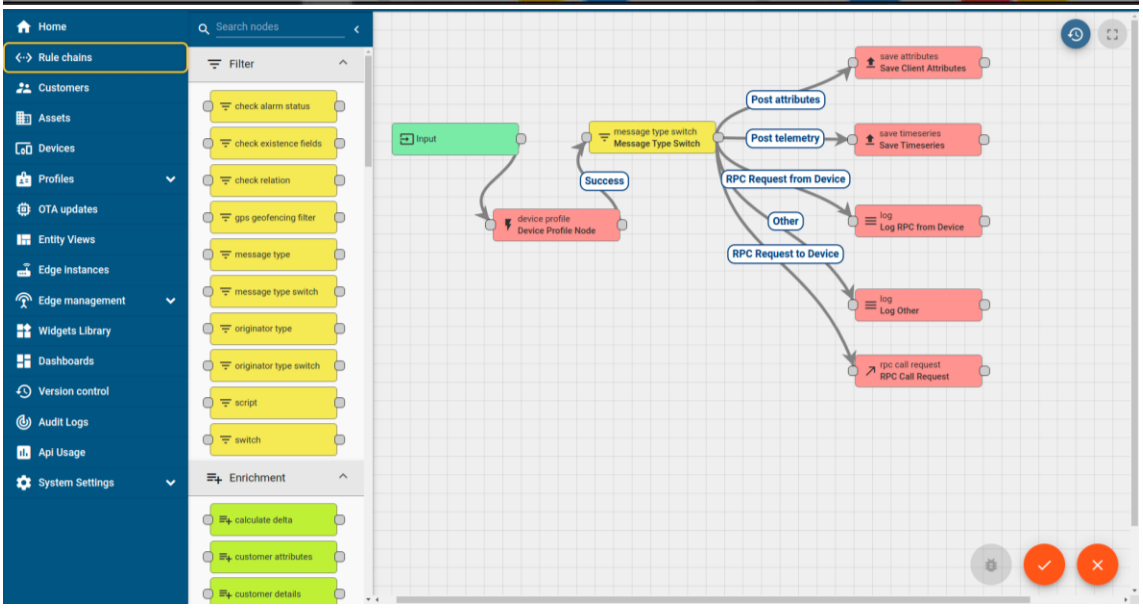
UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable "insight" for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- 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





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 unleased 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
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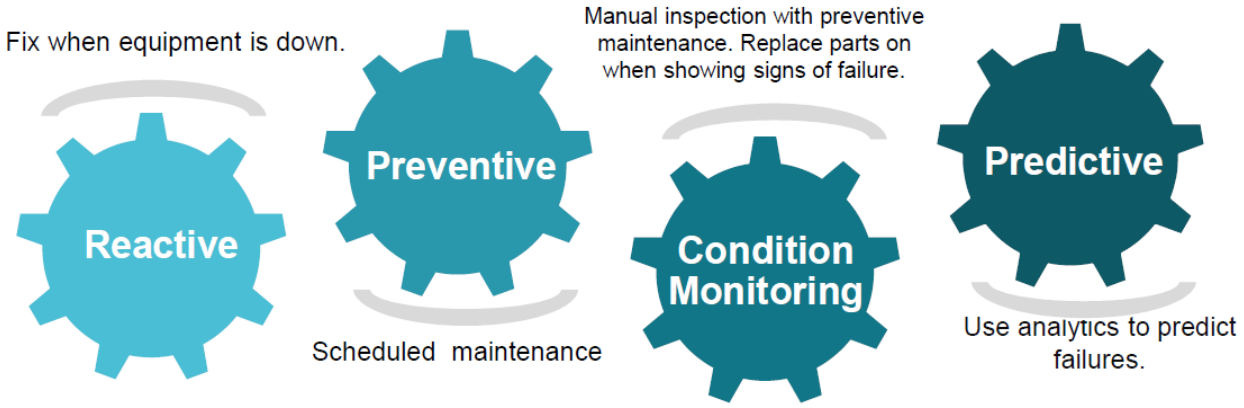
iii. LoRaWAN based Solution

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

iv. Predictive Maintenance

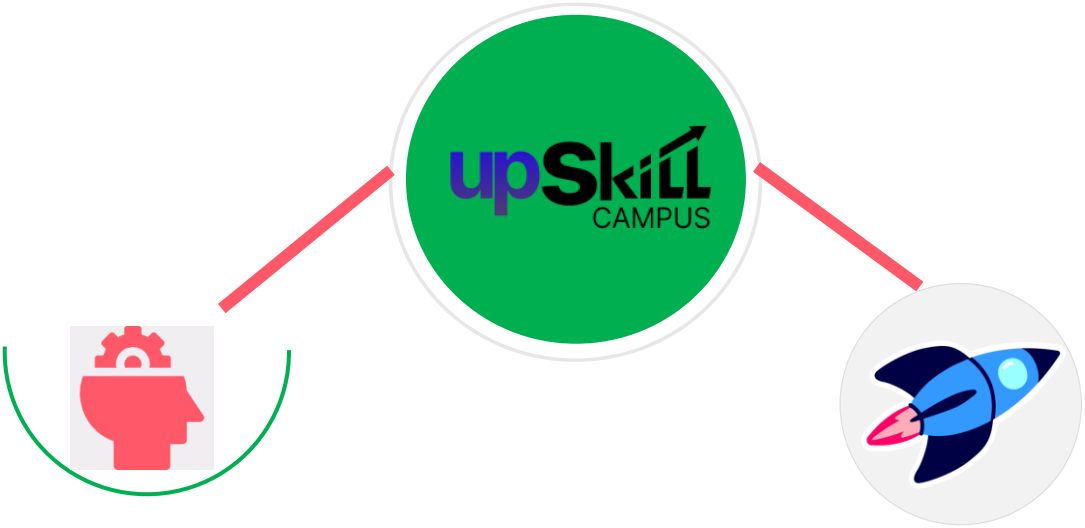
UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.



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.

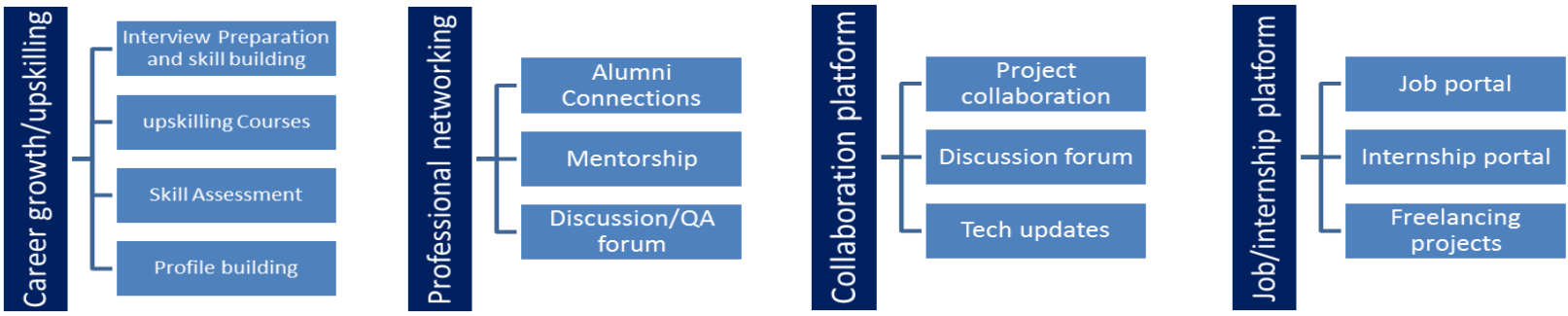
USC is a career development platform that delivers **personalized executive coaching** in a more affordable, scalable and measurable way.



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] UniConverge Technologies Pvt. Ltd – Internal Documentation
[2] upskill Campus Internship Guidelines
[3] The IoT Academy Learning Resources

2.6 Glossary

Terms	Acronym
Content Management System	**CMS**
Search Engine Optimization	SEO
Internet of Things	IoT
Software as a Service	Saas

3 Problem Statement

In the assigned internship problem statement, the objective was to design and understand a **Content Management System (CMS) for a blog** that enables non-technical users to create, manage, and publish website content efficiently.

Traditional website development requires knowledge of programming languages such as HTML, CSS, JavaScript, and backend technologies. This creates a barrier for individuals or organizations that want to manage blogs and websites without technical expertise.

The problem statement focuses on building a CMS that allows users to:

- Design web pages using a **drag-and-drop interface**
- Add and manage **textual and media content** dynamically
- Create, edit, and publish blog posts
- Convert user input into HTML and store it in a database
- Serve blog content over **HTTP and HTTPS protocols**
- Display blog posts using customizable page templates

The system should ensure ease of use, scalability, and secure content delivery.

4 Existing and Proposed solution

- **Existing Solutions**

Popular CMS platforms such as **WordPress** and **Drupal** provide full-stack solutions for blog and website management. These systems offer themes, plugins, content editors, and publishing tools.

- **Limitations of Existing Solutions**
- Complex configurations for beginners
- Performance overhead due to plugins
- Limited customization without technical knowledge
- **Proposed Solution**

The proposed solution is a **custom web-based CMS for blogs** that focuses on simplicity, usability, and modular design. The system enables users to visually design web pages using drag-and-drop components and publish blog content without coding knowledge.

- **Value Addition**
- Simplified UI for beginners
- Lightweight architecture
- Better control over content workflow

4.1 Code submission (Github link): https://github.com/varshaa-24/Content-Management-System-Blog/blob/9f68949c4bb234bbdfbf67b8088b2caf19aec843/source%20code%20for%20content%20management%20for%20a%20blog.pdf

4.2 Report submission (Github link) : 1.1 https://github.com/varshaa-24/Content-Management-System-Blog.git

5 Design Flow

1. User logs into CMS dashboard
2. User designs page using drag-and-drop editor

3. User adds text/media content
4. Content is converted into HTML
5. Data is stored in the database
6. Blog posts are rendered dynamically for visitors

5.1 High Level Diagram (if applicable)

Figure 1: High-Level Architecture of Blog CMS

User → Frontend (Drag & Drop Editor) → Backend Server → Database → Website Visitors (HTTP/HTTPS

5.2 Low Level Diagram (if applicable)

Figure 2: Low-Level Workflow of CMS System

Drag & Drop Editor → HTML Generator → Backend API → Database → Template Engine → Rendered Blog Page

5.3 Interfaces (if applicable)

START
↓
User Login to CMS
↓
Create / Edit Blog Content
↓
Add Text / Images / Media
↓
Content Converted to HTML
↓
Store Content in Database
↓
Review & Approve Content
↓
Publish Blog Post
↓
Blog Displayed on Website
(HTTP / HTTPS)
↓
END

The flowchart represents the complete workflow of a blog content management system. The user logs into the CMS, creates or edits blog content using a visual editor, and adds text or media. The content is converted into HTML and stored in a database. After review, the blog is published and displayed to visitors over HTTP/HTTPS protocols.

6 Performance Test

- **Identified Constraints**
- Content rendering speed
- Database response time
- Security of data transmission
- **Design Considerations**
- Optimized database queries
- Modular backend architecture
- HTTPS-based secure communication
- **Test Plan / Test Cases**
- Verify blog post creation
- Validate content rendering
- Check database storage accuracy
- **6.2 Test Procedure**
- Create sample blog posts
- Publish content through CMS
- Access blog using browser
- **6.3 Performance Outcome**
- Blog posts rendered correctly
- Stable performance under normal load
- Secure content delivery ensure

7 My learnings

Through this internship, I gained practical exposure to content management systems, full-stack web application architecture, and industrial software development workflows. I improved my understanding of frontend-backend integration, database handling, documentation standards, and real-world problem solving.

8 Future work scope

Future enhancements to the CMS include:

- Advanced drag-and-drop page builder
- Role-based access control
- AI-based content recommendations
- SEO analytics dashboard
- Multi-language content support