Industrial Internship Report on

”Hospital managment system ” Prepared

by

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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 Hospital management system using aws cloud services 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.

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1 Preface

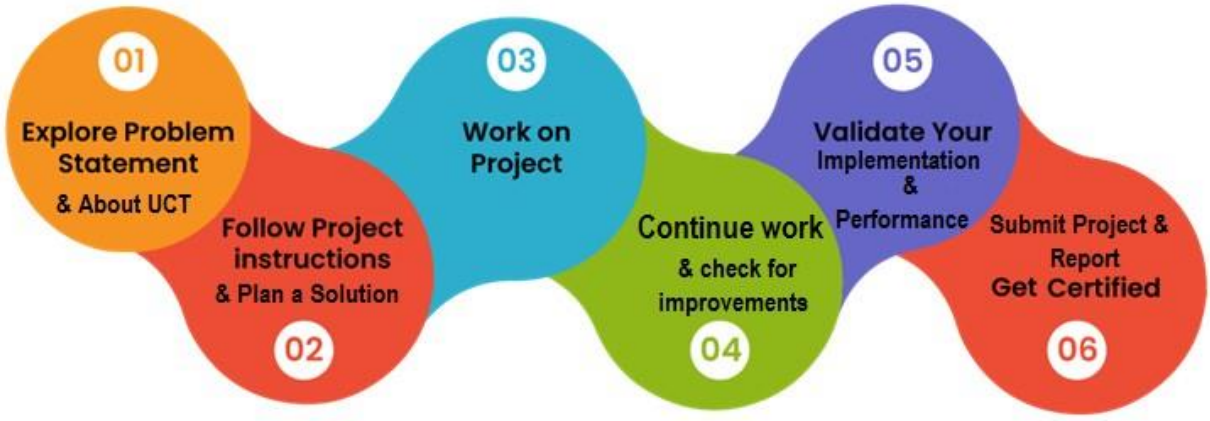
Summary of the whole 6 weeks' work.

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.

i. UCT IoT Platform (Insight)

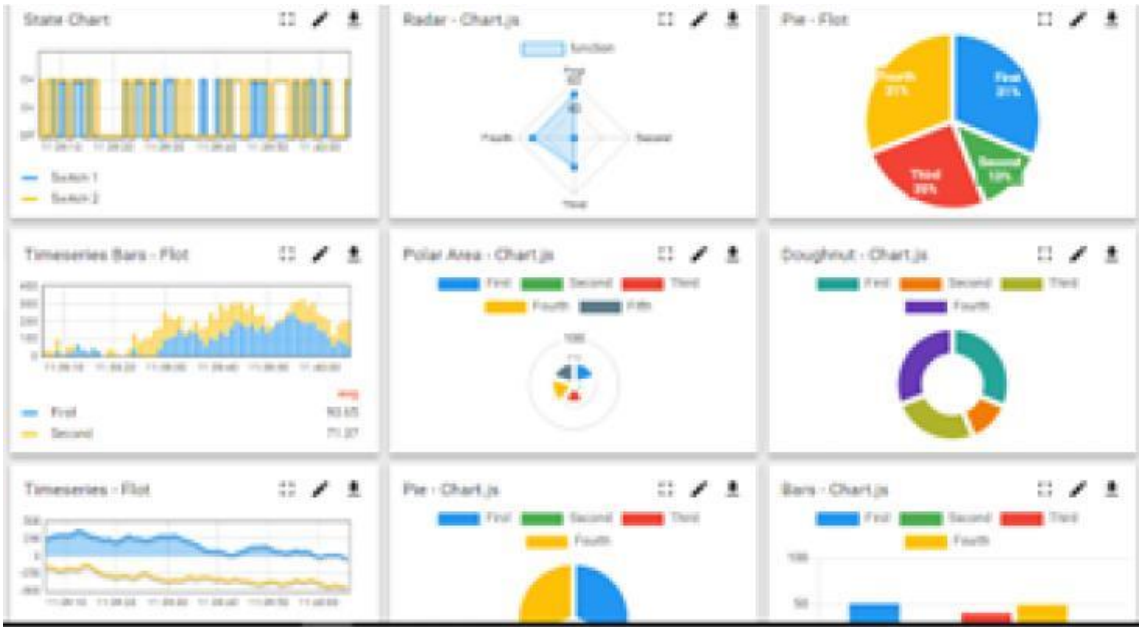
UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable "insight" for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

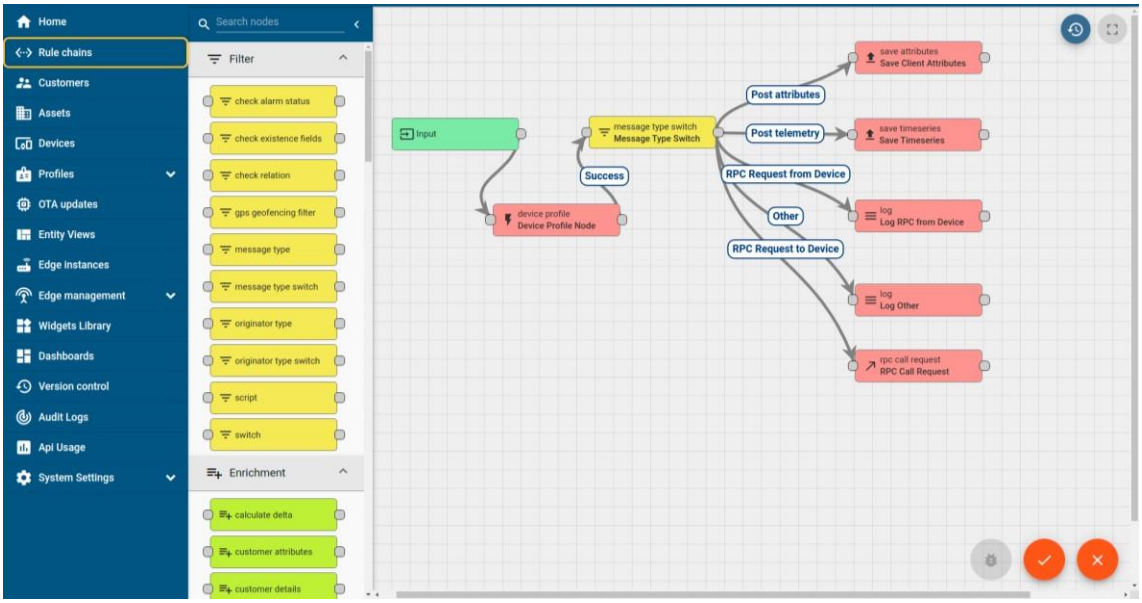
- It enables device connectivity via industry standard IoT protocols - MQTT, CoAP, HTTP, Modbus TCP, OPC UA
- It supports both cloud and on-premises deployments.

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


State Chart
Radar - Chart.js
Pie - Plot
Timeseries Bars - Plot
Polar Area - Chart.js
Doughnut - Chart.js
Timeseries - Plot
Pie - Chart.js
Bars - Chart.js


Home
Rule chains
Customers
Assets
Devices
Profiles
OTA updates
Entity Views
Edge instances
Edge management
Widgets Library
Dashboards
Version control
Audit Logs
Api Usage
System Settings
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Filter
check alarm status
check existence fields
check relation
gps geofencing filter
message type
message type switch
originator type
originator type switch
script
switch
Enrichment
calculate delta
customer attributes
customer details
Input
message type switch
Message Type Switch
device profile
Device Profile Node
Success
Post attributes
Post telemetry
RPC Request from Device
Other
RPC Request to Device
save attributes
Save Client Attributes
save timeseries
Save Timeseries
log
Log RPC from Device
log
Log Other
rpc call request
RPC Call Request

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.

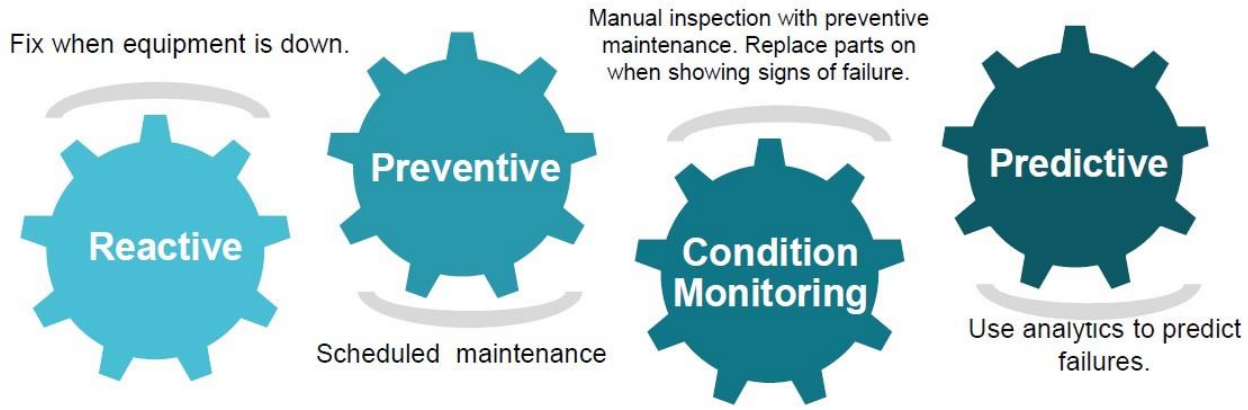
Machine	Operator	Work Order ID	Job ID	Job Performance	Job Progress		Output		Rejection	Time (mins)				Job Status	End Customer
					Start Time	End Time	Planned	Actual		Setup	Pred	Downtime	Idle		
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i
CNC_S7_81	Operator 1	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 teschnology and providing solution in Agritech, Smart cities, Industrial Monitoring, Smart Street Light, Smart Water/ Gas/ Electricity metering solutions etc. iv.

Predictive Maintenance

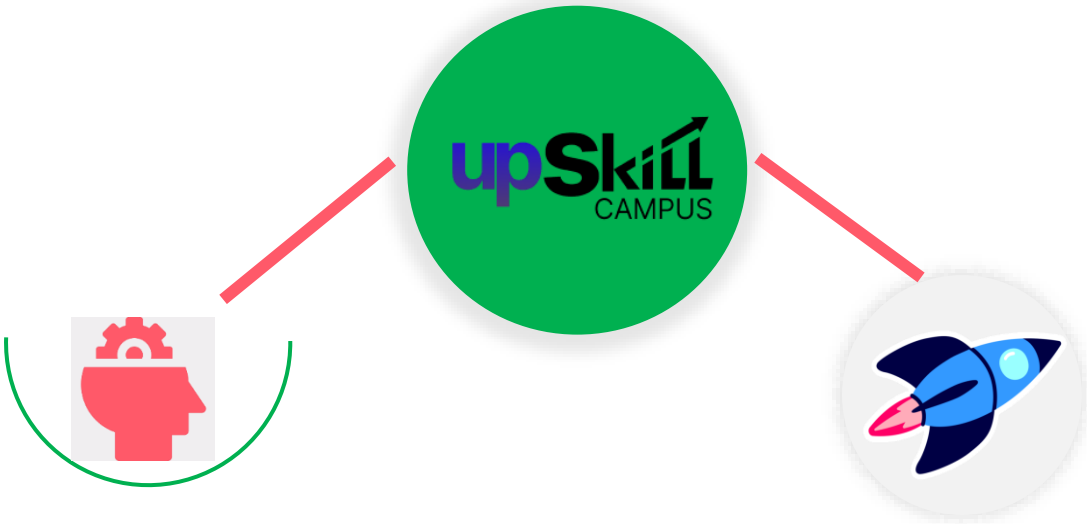
UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.



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.

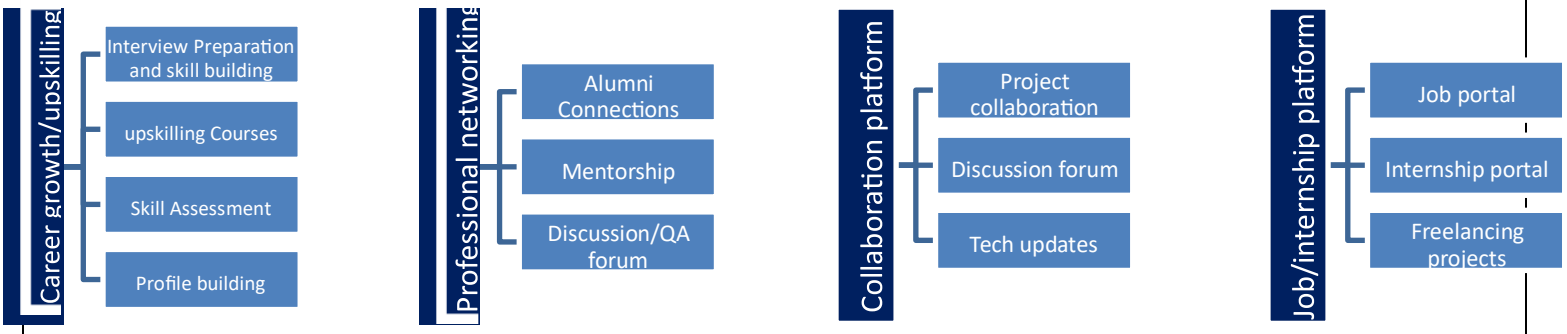


Seeing need of upskilling in self

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

paced manner along-with support services e.g. Internship, projects, interaction with Industry experts, Career growth Services

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] Binstock, Andrew (May 20,2015).” Java’s 20 Years of innovation”. Forbes, Archived from the originally on March 14,2016. Retrieved March 18, 2016

[2] Herbert Scheldt, Java Complete Reference, Fifth Edition, Tata McGraw Hill Edition

[3] “The Java Language Specification, 2nd Edition “Archived from original on August 5, 2011. Retrieved February 8,2009

2.6 Glossary

ACE	The Patient Protection and Affordable Care Act
ACC	Accountable Care Collaborative
ACI	Advancing Care Information
ACO	Accountable Care Organization
AI	Artificial Intelligence
AIU	Adopt, Implement, Upgrade (certified EHR technology)
ANPRM	Advance Notice of Proposed Rulemaking
ANSI	American National Standards Institute
API	Application Programming Interface
APM	Alternative Payment Model
ARRA	American Recovery and Reinvestment Act of 2009
ASC	Ambulatory Surgical Center
ASP	Application Service Provider
ATCB	Authorized Testing and Certification Body
ATL	Accredited Testing Laboratory
ATNA	Audit Trail and Node Authentication
BAA	Business Associate Agreement
BHIE	Bidirectional Health Information Exchange
BPCI	Bundled Payments for Care Improvement
BYOD	Bring Your Own Device
BYOP	Bring Your Own Phone
BYOPC	Bring Your Own PC
BYOT	Bring Your Own Technology
CAH	Critical Access Hospital
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CBO	Community-Based Organization

CBSA	Non-Core Based Statistical Area
CCD	Continuity of Care Document (CCR + CDA became CCD)
C-CDA	Consolidated Clinical Document Architecture
CCN	CMS Certification Number
CCR	Continuity of Care Record
CDA	Clinical Document Architecture
CDO	care delivery organization
CDR	Clinical Data Repository
CDS	clinical decision support
CDSS	clinical decision support system
CEHRT	Certified Electronic Health Record Technology
CER	Comparative Effectiveness Research
CFR	Code of Federal Regulations
CHC	Community Health Centers
CHIPRA	Children's Health Insurance Program Reauthorization Act
CHIP	Children's Health Insurance Program
CHPL	Certified Health IT Product List
CHR	Community Health Records
CJR	Comprehensive Care for Joint Replacement
CLIA	Clinical Laboratory Improvement Amendments
CPOE	Computerized physician order entry
CPRS	Computerized Patient Record System
CPS	Composite Performance Score
CPT	Current Procedural Terminology
CQM	Clinical Quality Measure
CTE	Conditions for Trusted Exchange
CY/FY	Calendar Year / Fiscal Year (Federal)

3 Problem Statement

In the assigned problem statement

First problem is it is to complex to manage the patient data, medical records, and imaging that can help healthcare organizations to store, access, and share critical information securely and efficiently

4 Existing and Proposed solution

Provide summary of existing solutions provided by others, what are their limitations?

In the provided code of others health care management system I found that there limitations like not prepared for AI based model and some time they give server problem

What is your proposed solution?

These prepared solution is much better when it work with AI and it is compatible and well prepared for many sever issue and low cost solution and easy handling solution

What value addition are you planning?

I am seeing about adding AI technique in this model and adding some smart feature like connecting with ABHA card directly giving facility and billing info while entering in web

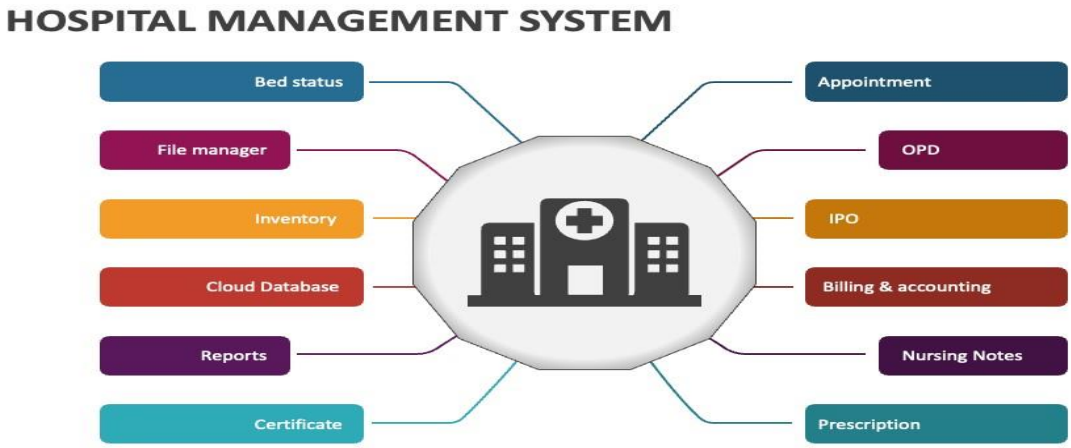
3.1.Code submission (Github link):

upskillcampus1/ at main · MarojuNageshwar/upskillcampus1 (github.com)

3.2.Report submission (Github link) :

https://github.com/MarojuNageshwar/upskillcampus1/tree/main/HealthCare-Management-System-codes-python

4 Proposed Design/ Model



Basically this system is implemented using Fullstack

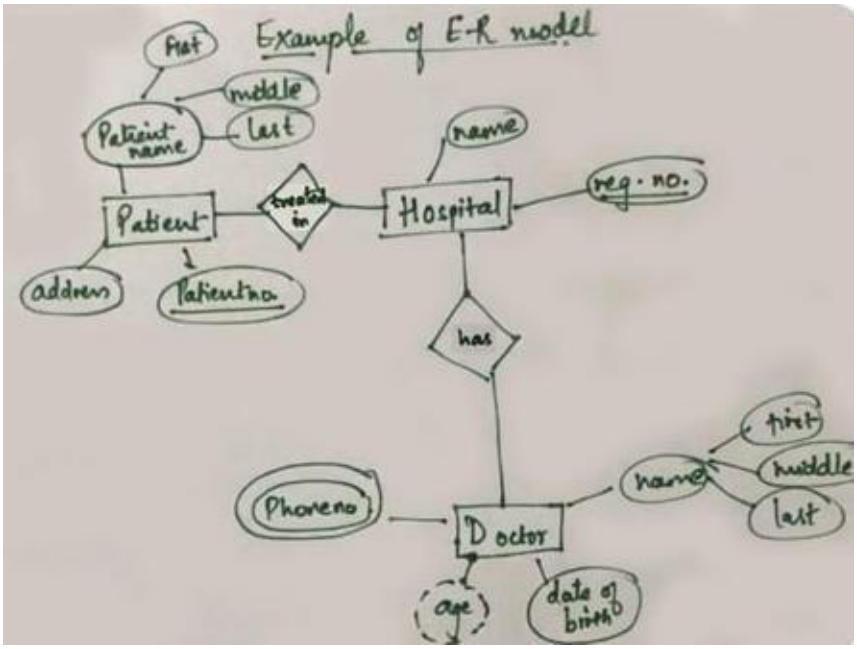
1. Front end work : it includes HTML, CSS, BOOTSTRAP, JAVA
2. Backend work: it include XAMP SERVER (YOU CAN USE DJANGO ALSO)

For other information we use cloud of AWS for deploying this on cloud data saving

4.1 High Level Diagram (if applicable):

Figure 1: HIGH LEVEL DIAGRAM OF THE SYSTEM

4.2 Low Level Diagram (if applicable):



5 Performance Test

As we added some name as patient and save data on cloud and search for services on the website these give best response and reactive website and at time of deploying on AWS these is very easy to use and handle

6 My learnings

In these project basically I learnt about if we create basic web system how it we can make featural

I upgraded some new FRONT END skills and BACK END skills at time of hospital management system development

In this I also learn about how we can manage data storing on cloud in specific location and give more flexibility to website or system it make system easy to work.

And understand more helpful feature about cloud services of AWS.

7 Future work scope

In future I am seeing towards the adding AI system in hospital management system and make this system fully automatic as we see this system in many online shopping app