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Industrial Internship Report on

”Titanic Survival Prediction”

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 sinking the Titanic Survival Prdiction which would occur on April 15, 1912. Using the Titanic dataset I can build a model that predicts whether a passenger on the Titanic survived or not. 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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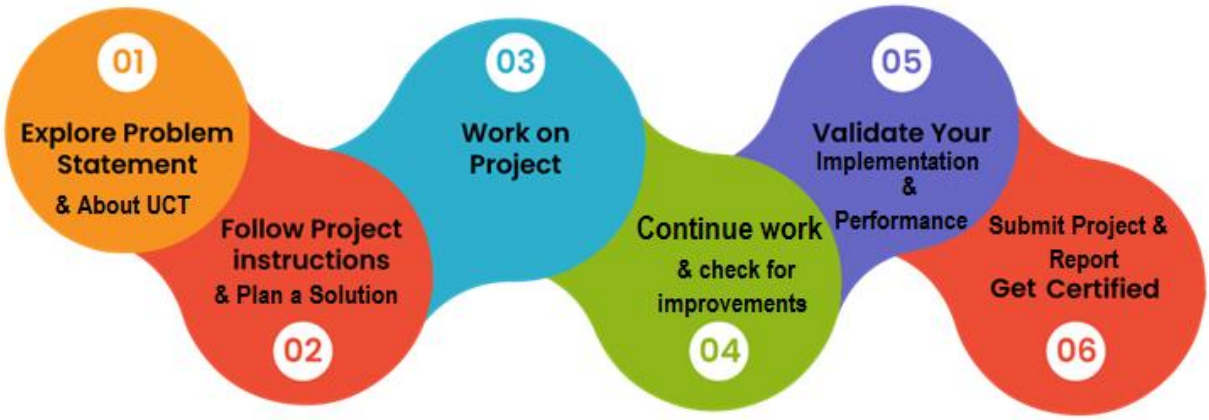
1 Preface

In this whole 6 week intermship, I get familiar with Machine Learning and DataScience.And get the deep knowledge about whole course.

Using the Titanic dataset I can build a model that predicts whether a passenger on the Titanic survived or not.

This opportunity given by USC/UCT really help me to improve my knowledge .

How Program was planned



Your Learnings and overall experience.

Thank to all the USC/UCT members for always helps and support me.

My message to juniors and peers was just apply it for this internship it very helpful and boost your linkedin profile and they gaves a lot of time to complete your work.

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.

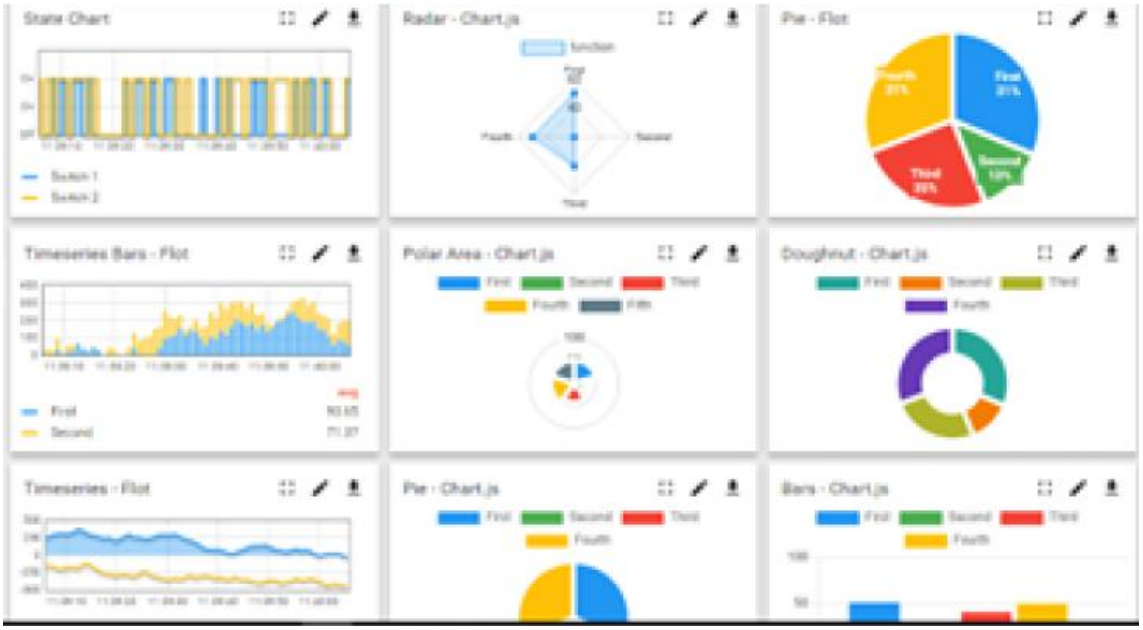
i. UCT IoT Platform (UCT Insight)

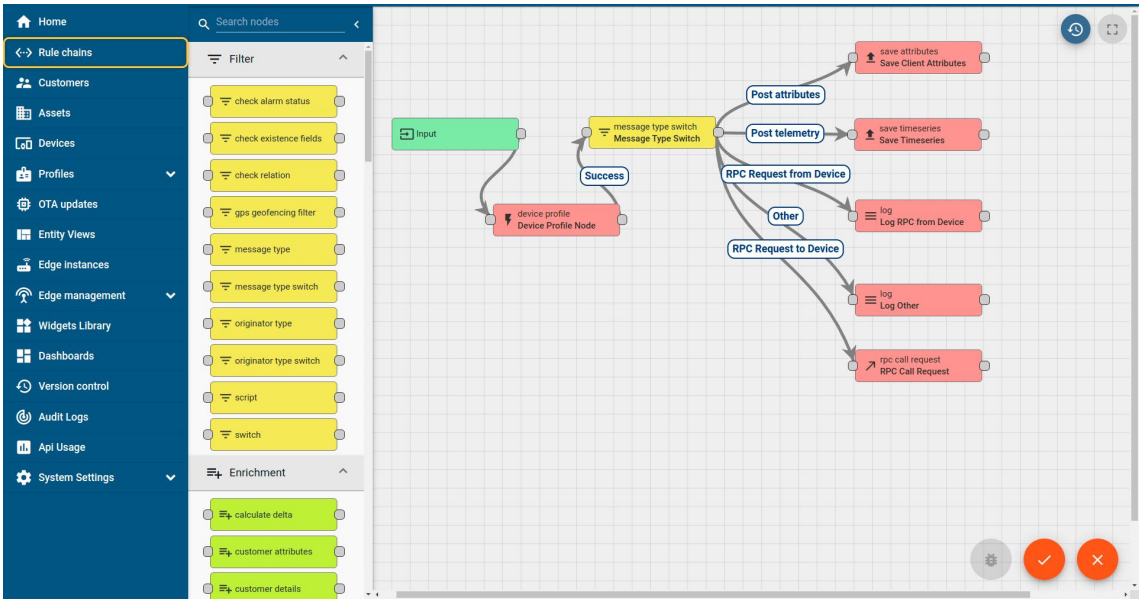
UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable "insight" for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- 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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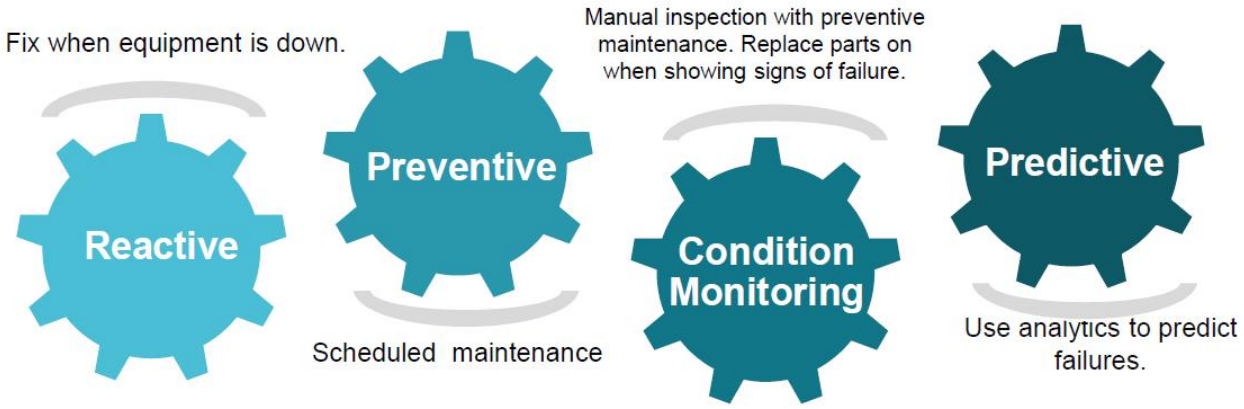
iii. LoRaWAN based Solution

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

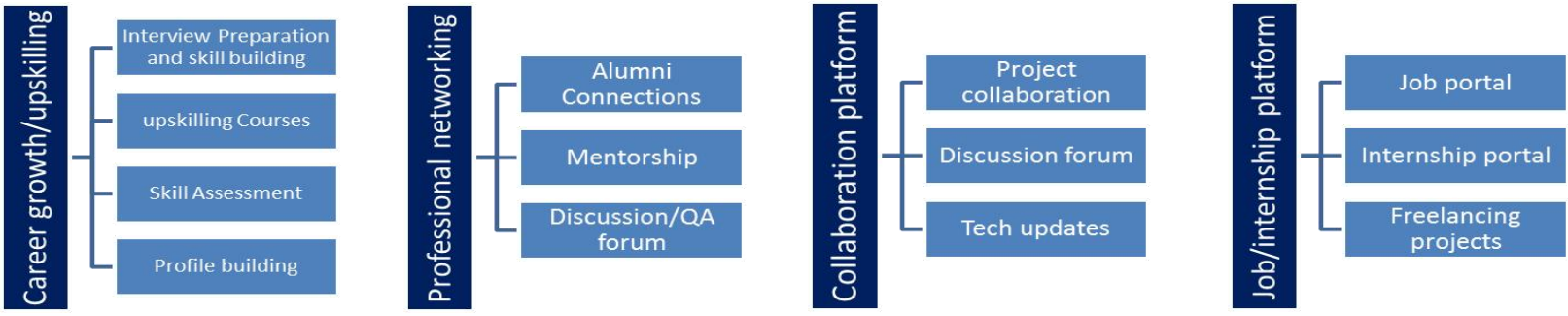
UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.



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.



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.

3 Problem Statement

- Using the Titanic dataset I can build a model that predicts whether a passenger on the Titanic survived or not.

- The sinking of the Titanic is one of the most infamous shipwrecks in history.

- On April 15, 1912, during her maiden voyage, the widely considered “unsinkable” RMS Titanic sank after colliding with iceberg. - Unfortunately, there weren’t enough lifeboats for everyone on board, resulting in the death of 1502 out of 2224 passengers and crew.

- While there was some element of luck involved in surviving, it seems some groups of people were more likely to survive than others.

3.1 Code submission (Github link) : https://github.com/renagondaliya/upskillCampus/blob/main/Titanic%20Survival%20Prediction.ipynb

3.2 Report submission (Github link) : first make placeholder, copy the link.

4 Proposed Design/ Model

The design flow for your Titanic survival prediction project begins with problem definition, where the goal is to predict passenger survival based on available features. The next stage involves data collection and preprocessing, where you load the dataset, perform exploratory data analysis (EDA) to understand distributions and correlations, and handle missing values through imputation or removal. Feature engineering follows, involving the selection and transformation of relevant features, encoding categorical variables, and scaling numerical ones if necessary. Once the data is prepared, model selection and training take place, where various machine learning algorithms like logistic regression, decision trees, or ensemble models are trained and evaluated. The final stage includes performance evaluation using metrics like accuracy, precision, recall, and F1-score, followed by model tuning to improve predictions. After achieving optimal results, the model is deployed or used for further insights, ensuring practical applicability in decision-making.

5 Learnings

During your Data Science and machine learning internship, you gained practical experience in building predictive models, handling real-world datasets, and improving model performance. You worked on data preprocessing, including cleaning, feature selection, and transformation, followed by training and evaluating machine learning models. You explored different algorithms, fine-tuned hyperparameters, and optimized models using techniques like cross-validation. Understanding key evaluation metrics such as accuracy, precision, recall, and F1-score helped in assessing model effectiveness. Additionally, you learned about model deployment, automation, and real-world applications, along with improving problem-solving, collaboration, and presentation skills to effectively communicate insights.