

# Internship Report

Working As Data Analyst Intern for Zolve Innovations Pvt  
Ltd.

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## **Acknowledgment**

This report has been written by me and has not received any previous academic credit at this or any other institution.

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## Executive summary

Zolve is a cross border fintech that enables fair access to global financial products. The first product is Zolve Credit Card which is US Credit Card that comes with no annual fee, a high credit limit and can be used across continents with no foreign transaction fees. The second product is Zolve Azpire Credit Building Card which helps in building credit score since Day 1 and it is the best way to send money across borders. Working as a data analyst intern at the company has allowed me to utilize my SQL, Python and statistical skills to achieve the tasks assigned to me.

While working for Zolve Innovations Pvt Ltd., I was responsible for building machine learning models to make the necessary predictions. In addition to this, I also had to build a CRUD service using DJANGO Rest Framework in PyCharm IDE and connect my model to the API. The proposed prediction was the top three merchants in three categories: Shopping, Food & Travel, a user might transact in the next month based on the previous year's data.

## Introduction

Being part of the workforce was a great opportunity for me to put all of my academic training to use. Zolve Innovations Pvt Ltd. is a company that provides a very healthy work and educational environment with an open-door policy that encourages employees to produce their best work. Consequently, working as a data analyst at Zolve Innovations Pvt Ltd. was a great experience for me, because I had a chance to deal with a large amount of data collected from the user transactions. Moreover, interacting with employees from different departments also enhanced my social and educational experience.

## Organization description

### Zolve Innovations Pvt Ltd.

Zolve is a cross-border Neo bank. It currently works with banks in the U.S. and India to provide consumers access to financial products seamlessly – without paying any premium or coughing up any security deposit. It underwrites the risks, which has enabled banks in foreign countries to extend their services to Zolve customers.

Working with banks in India has helped Zolve gain clarity on the individuals and do the underwriting. The startup now plans to replicate this model for customers from other nations.

## Internship work

### Main tasks:

1. Filtered the data from Presto [Zolve Database] using SQL queries according to various factors: Transaction date, Transaction Type, Heron Category, Product Type, Card Status, Transaction Status, User Profile Type and Transaction Type.
2. Built a Machine Learning Model KNN Classifier to predict top three merchants a user might transact in the month of July based by considering data from August 2021 – May 2022 as Training Data and data from June as Test Data.
3. Built a Rest API using Django Rest Framework and connected my ML Model to the CRUD Service. The user id is given as input to the API, which displays the predictions.



### 1. Modeling and Predictions

#### Cleaning and Pre-Processing Data:

Data preprocessing is a step in the data mining and data analysis process that takes raw data and transforms it into a format that can be understood and analyzed by computers and machine learning. The data from Presto had to be filtered according to the needs of our prediction model. This was done using SQL queries. We also observed a certain trend that in some of the months the number of transactions were high. The number of transactions and the average transaction amount of those months were considered for seasonality purpose.

#### Building Model:

KNN Classifier Model was used to make predictions. I also used Logistic Regression, Random Forest Classifier and SVC Classifier, but since KNN model gave the best accuracy, I chose to use that model. Number of transactions and Transaction amount were the main variables which were considered since they affected the prediction directly. The classification report reported 64% accuracy for the model. Recall, precision and f1-scores were also calculated. Probabilities of the user transacting with that merchant were calculated which were used to find out the actual and predicted values in Binary.

## 2. Building API

### Implementing the Model:

Initially the model was implemented in Jupyter, but since the API was built on PyCharm IDE, the model was coded in PyCharm. The model returned the user id and the merchants in the form in JSON format. Three models were created for three categories and another function was defined which called all the model functions.

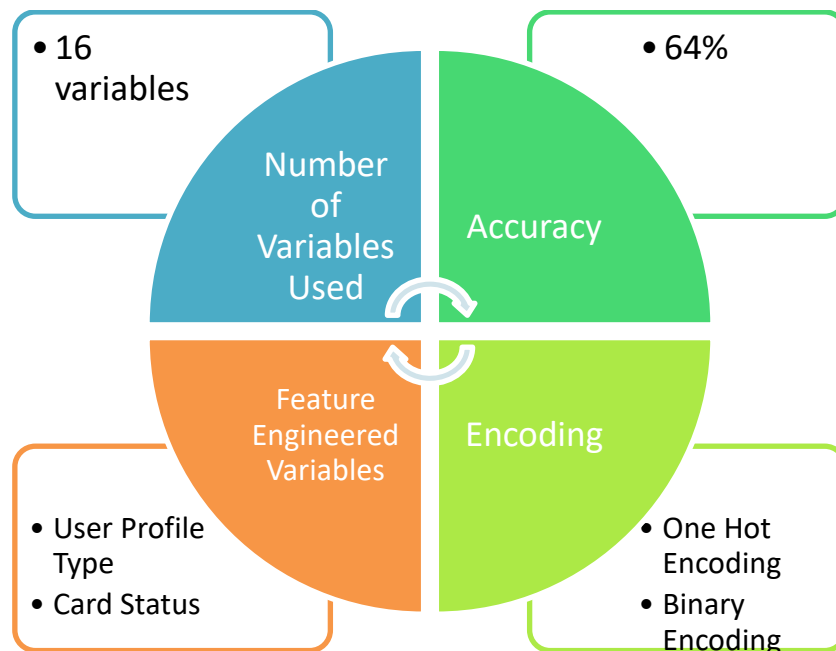
### REST API using Django REST Framework

A simple API service was built. In the views function, a post request was defined which was used by the users to input their user id. And the API displayed the results. In URLs file, the URL of the API was defined. Initially it was connected to local host before the API was deployed. The coding was done in Python using Django Framework.

## 3. Deploying the API

### Docker file and Kubernetes

Once the API has been built, I had to deploy it using Kubernetes and Docker, thus not using local host each time it is run. It was thus connected to the Zolve network.



## Relation to Information Science

Information Science is a technical engineering branch and Data Science is one of the popular specializations in the IT sector.

- ❖ Utilizing my SQL knowledge which is a course in my upcoming 5<sup>th</sup> semester – Relational Databases Management Systems allowed me to create complex SQL statements, which ensured accurate and precise results.
- ❖ Using my Python skills and knowledge taught in the Python programming course in my 3<sup>rd</sup> semester were very beneficial in creating models and data visual representations.
- ❖ Utilizing the statistical knowledge taught in the Linear Algebra and Probability Theory course in my 4<sup>th</sup> semester helped me to perform analytical and statistical analysis when required.
- ❖ Machine learning, a 6<sup>th</sup> semester course, played a major role in my internship. I implemented ML models for predictions.

## Conclusion

Being part of a very successful neo bank, like Zolve Innovations Pvt Ltd., gave me a different perspective on the role of Data Analyst in the workforce. The experience that I have gained from working as a data analyst was very educational. In addition, working for the company showed me the variety of tasks that I could handle as an analyst. Being able to utilize many of my technical skills such as Python and SQL, combined with the statistical knowledge to handle the tasks assigned to me, proved to me that my analysis skills and knowledge could be applied in the workforce. The most rewarding part of working at Zolve Innovations Pvt Ltd. was the satisfaction of getting the practical learning after the theoretical courses taught in our courses.



## References

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