



# RG SmartDiscovery LLP

## August'2013 | INDIA

“Design Thinking” driven AI/ML/Blockchain Product Company

<http://www.mlcloudstudio.com/>

# Company & Team

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Founded in 2013

# Business Summary

## RG SmartDiscovery LLP

Headquartered at Delhi, India

### About Us

RG SmartDiscovery LLP has been boutique research oriented registered self-funded Indian entity [based out of Delhi, India] co-founded by Mr. Gaurav Gupta and Mrs. Renu Gupta (Full time Founder).

Company core objective is to build AI/ML Platform, product and services over top of strong technical pillar leveraging Open-Source Tech-Stack, Machine Learning, Cloud Infra & Blockchain technologies to democratize & accelerate business solutions for clients.



# Our Company Product Portfolio



We have worked for over 35+ B2B clients and 1 Million+ end users for various applications



## Portfolio 1

Built Customer Data Platform from scratch with Infrastructure



All about night life



## Portfolio 2

End-to-End Product Development [Android, IOS and Web]



## Portfolio 4

End-to-End Platform Development using Computer Vision, Deep-Learning



## Portfolio 1

Built Customer Data Platform from scratch with Infrastructure



All about night life



## Portfolio 3

Owned Application Platform, Products [Funcandi, Games]



## Portfolio 5

Research and Development Arm

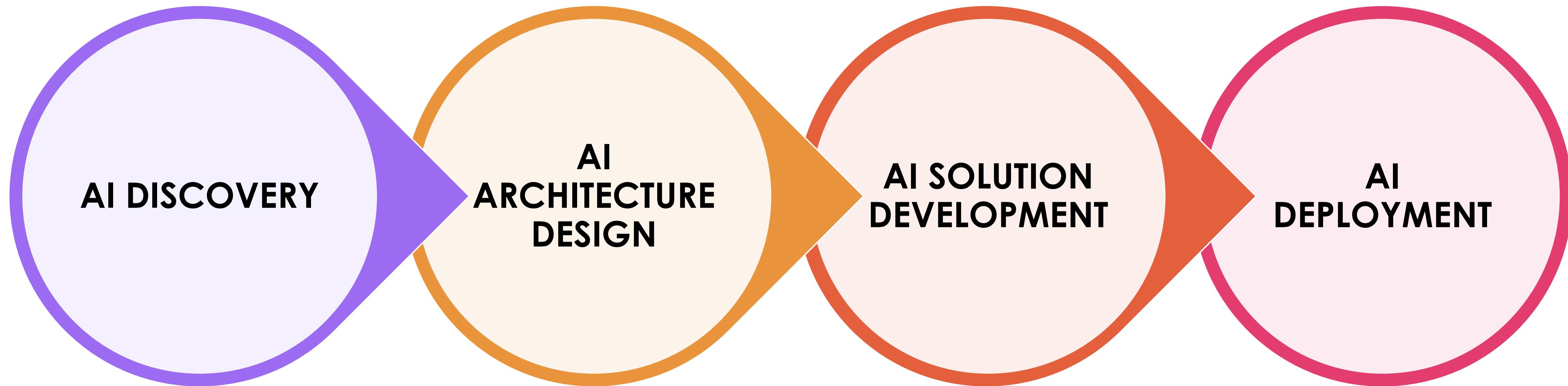
We leverage Open-Source technologies such as Tensorflow, Pytorch, Python, Java, Keras, ReactJs for core-algorithms empowered with AWS/Azure/Google Cloud Services (to ensure data confidentiality/security and SLA of 99.95% uptime/availability).

# Our Company Journey



- Started with **homegrown Machine Learning** drive product named “FUNCANDI”
- Started **Machine Learning/Deep Learning/Computer Vision** product development [2013-2018]
- Started working on few **niche ML research applications** from Jan'2019 and acting as “**Research and Productization Arm**”

# Our AI Capabilities



- We also offer a rapid prototyping to determine if your idea could potentially be solved with AI.
- Our architecture design incorporates cloud or on-premise requirements, data protection laws, and speed of processing, all important considerations for any effective AI system.
- We build a Minimum Viable Product (MVP) that allows the client to engage with an AI solution that runs on a subset of data, and with perhaps just one or two models.
- Deployment of your AI project can be either via hosted cloud service such as AWS, Azure or GCP. ML Models can also be containerized.

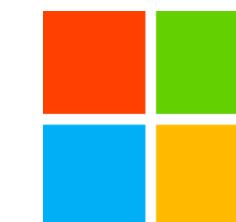
# Leadership Team

**Gaurav Gupta**

**CEO and CTO**



GAURAVGUPTA



**Microsoft**

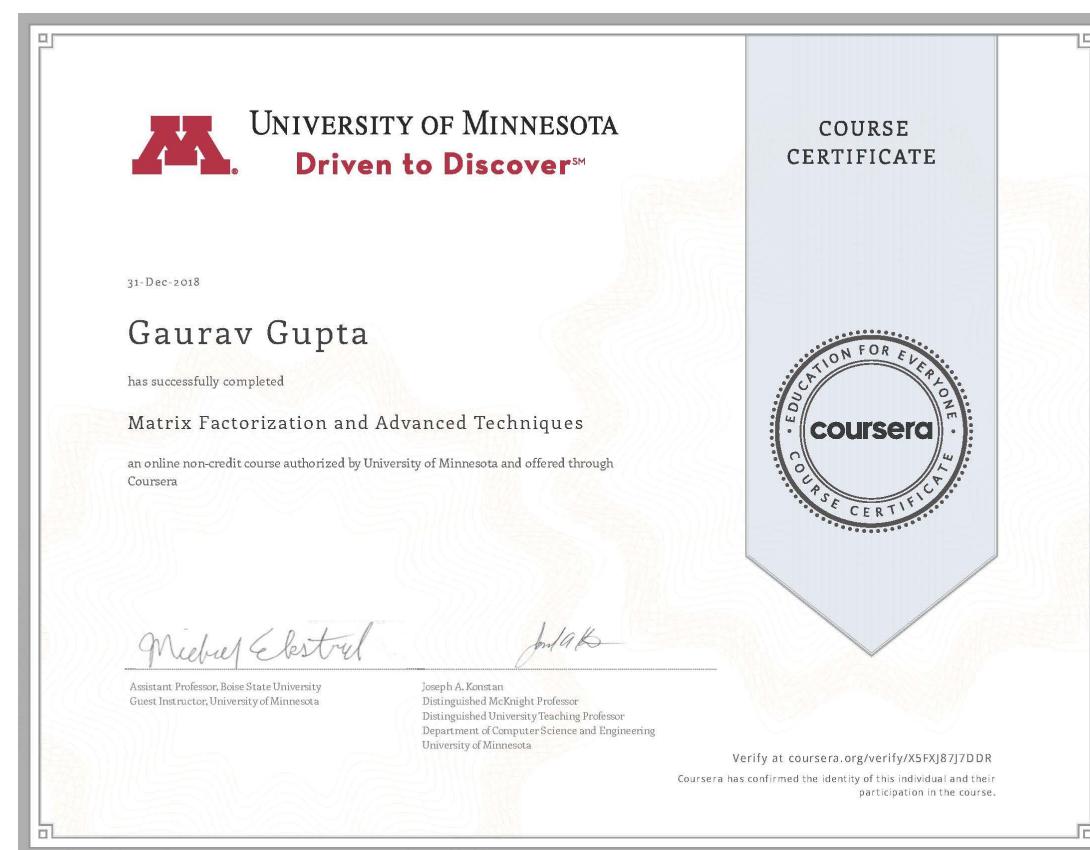
Built and scaled \$200M+ of products at HCL, Nasdaq, Adobe and Microsoft. 14+ years of experience in AI/ML and Blockchain technologies. Managed teams of 50+ data scientists. 4+ approved patents  
MBA, University of Delhi.

**Renu Gupta**

**CFO & CHO**



Serial entrepreneur and Qualified Company Secretary with 8+ years of Entrepreneurship experience with lot of passion in building Fintech products based on AI/ML and Blockchain.



The Institute of  
Company Secretaries of India



# Core Team



Ankush  
Vashisht  
Sales Director



Aman Jaiswal  
Lead Deep Learning  
Engineer & Computer  
Vision Specialist



Lav Singh  
Lead UI/UX and  
Blockchain Developer



Apoorv Omar  
Lead Data Scientist



Bhanupriya  
Lead Full-Stack  
Developer

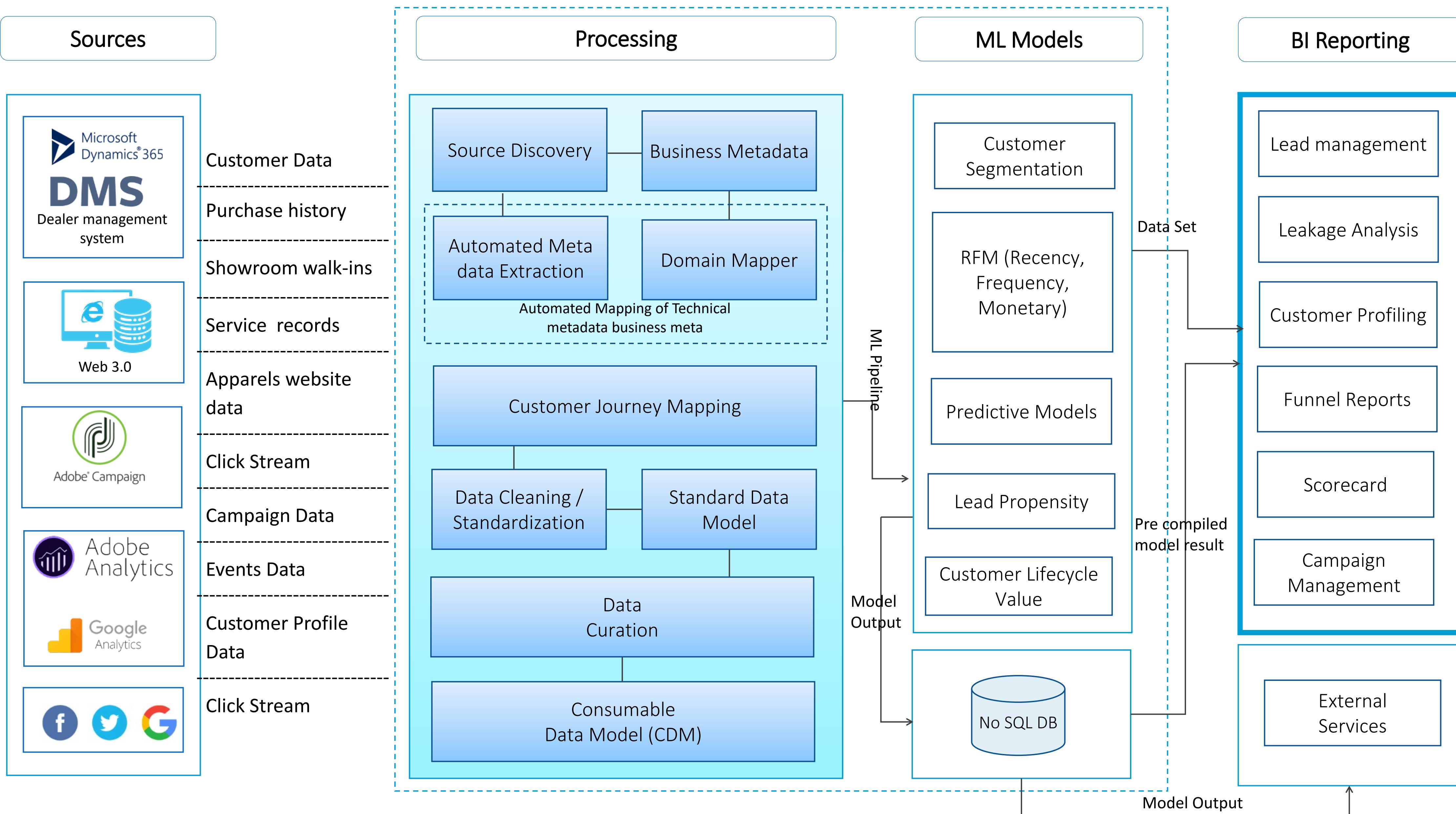


# Case Studies



UCCP (Unified Customer Profile)

# Solution Architecture for UCCP For Rawcubes & Royal Enfield



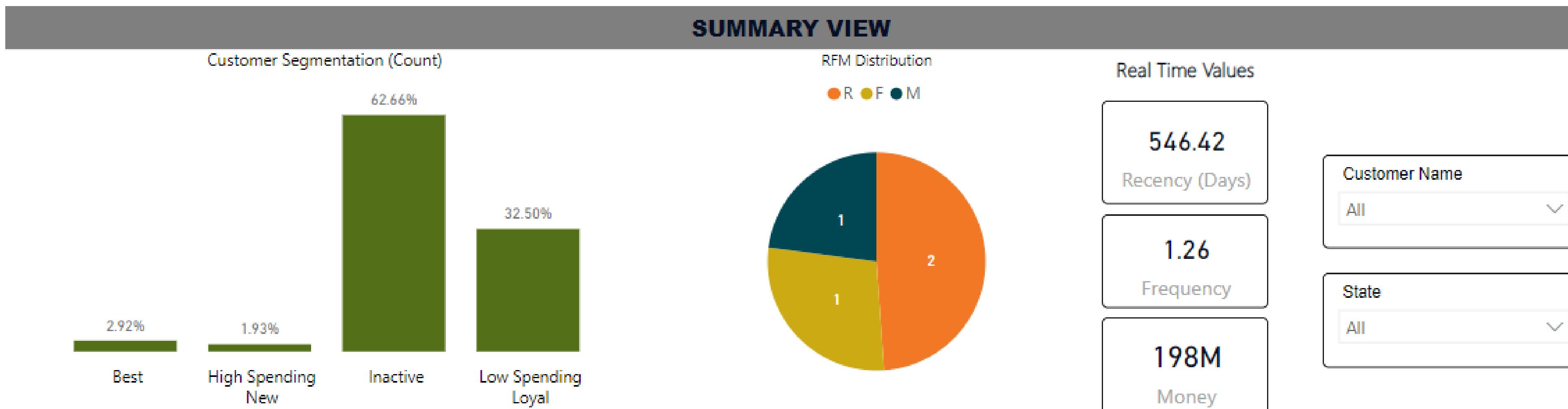
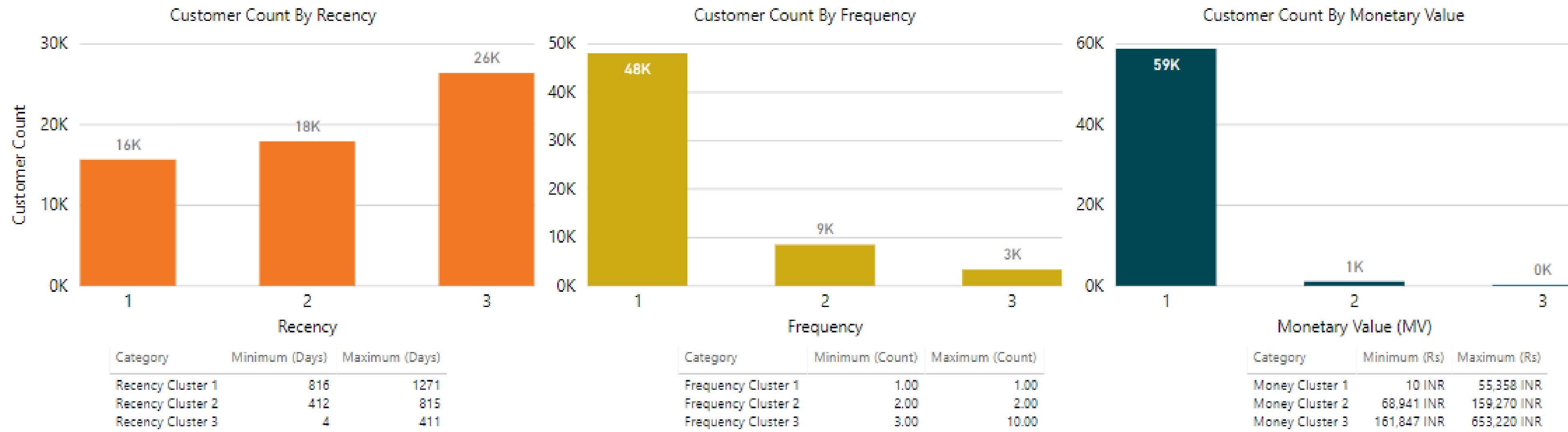
# RFM Model Description

Item	Description
Business background	Customer segmentation on the basis of Recency, frequency and monetary value of the customer
Input data sources	<p>1. DMS system,</p> <ul style="list-style-type: none"> <li>• by joining Customer account           <ul style="list-style-type: none"> <li>• customer assets,</li> <li>• customer job order,</li> <li>• bookings,</li> <li>• appointments, warranty and insurance)</li> </ul> </li> </ul>
Data quality matrix	Customers      Invoice 1.6M            82821
ML Model Description	K means clustering
Customer Segmentation	Segmenting customer as 'Churn', 'Low spending loyal' , 'Inactive' , 'Best', 'High spending new' , on the basis of their RFM scores
Actionable Insight	<ul style="list-style-type: none"> <li>• Action for marketing team to address churning customers or get continuous engagement with high spending loyal customers</li> <li>• Increase in Cross-Sell/Up-Sell Opportunities</li> <li>• Prevention of customer loss</li> <li>• Notification to send offer through ACM</li> </ul>

Customer Type	Recency	Frequency	Monetary	Action for Marketing Team
Best Customer	High	High	High	Run loyalty campaigns
High Spending New	High	Any	High	Converting one-time customer into life-time customer
Churning	Low	High	High	Run retention campaign like sending deals or promotional offers on service or warranty
Low Spending Loyal	High	High	Low	Send details about new product launches
Passive	Low	Low	Low	Organize brand awareness campaigns
Custom defined by business	Custom	Custom	Custom	Custom offers

# UCCP POC – RFM(Recency, Frequency and Monetary) Model

## Customer Segmentation based on Recency, Frequency and Monetary



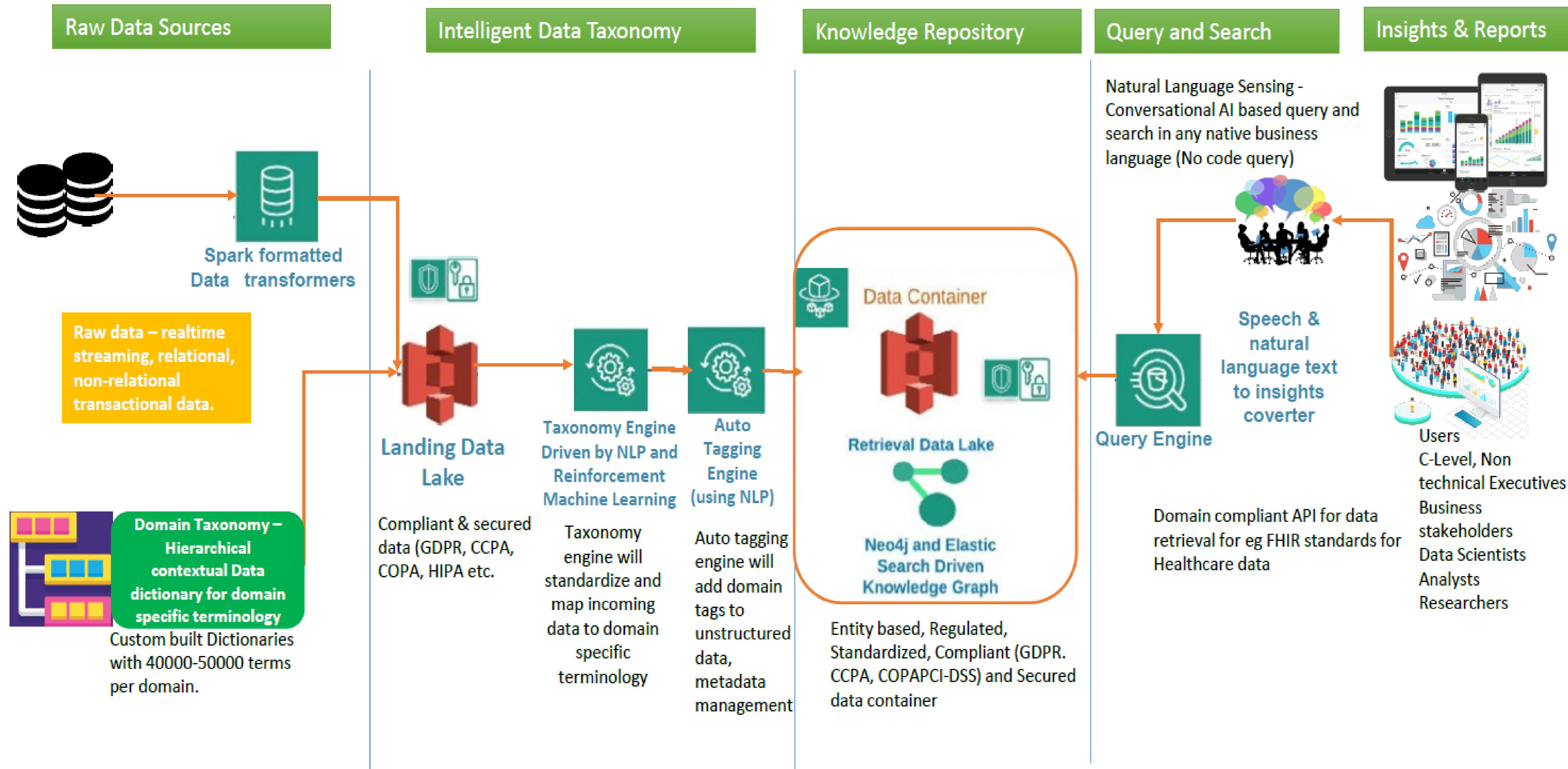
# Customer Profile

## Customer Profile – Single Customer View





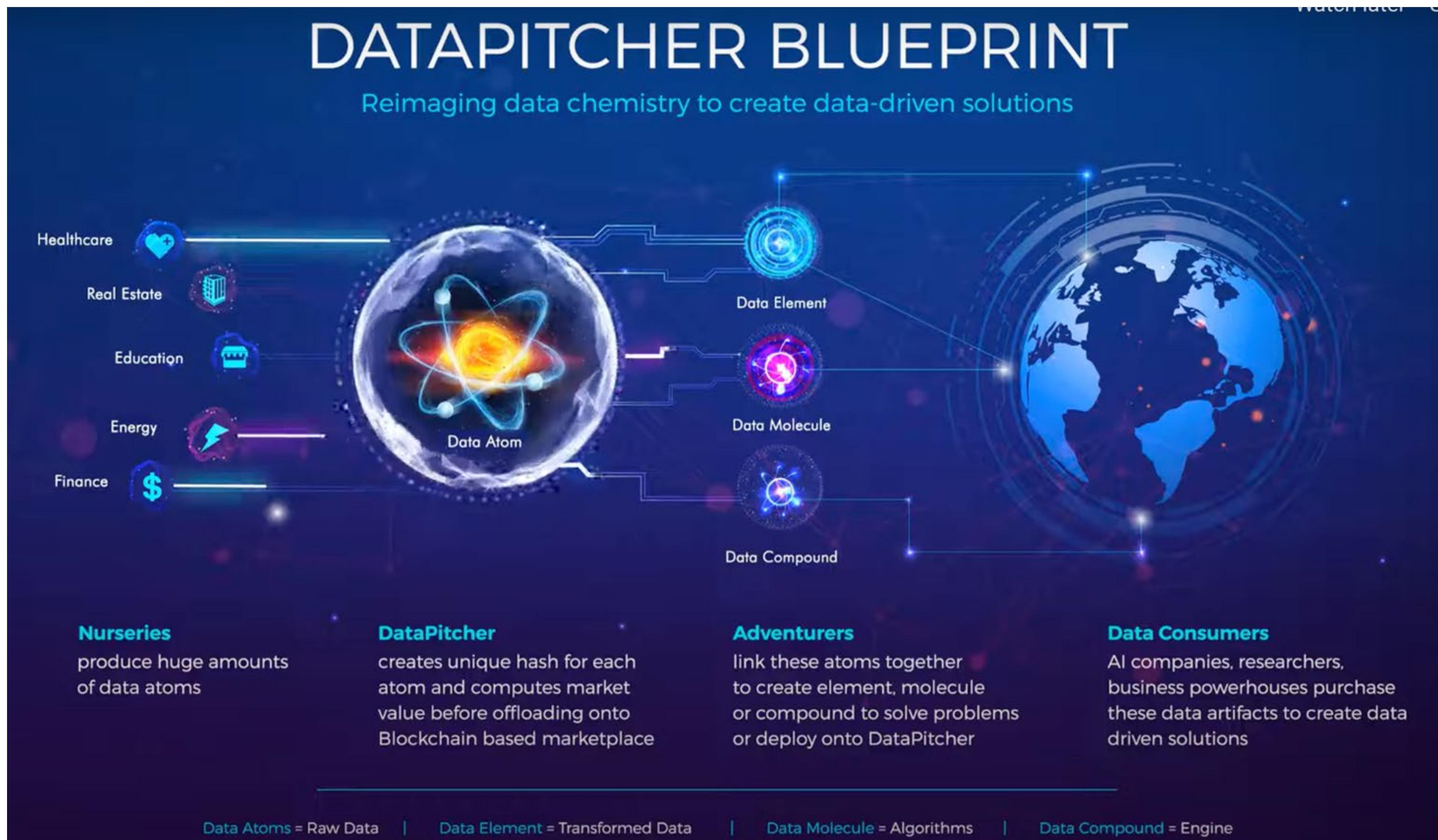
Augmented Data Discovery





DATAPITCHER

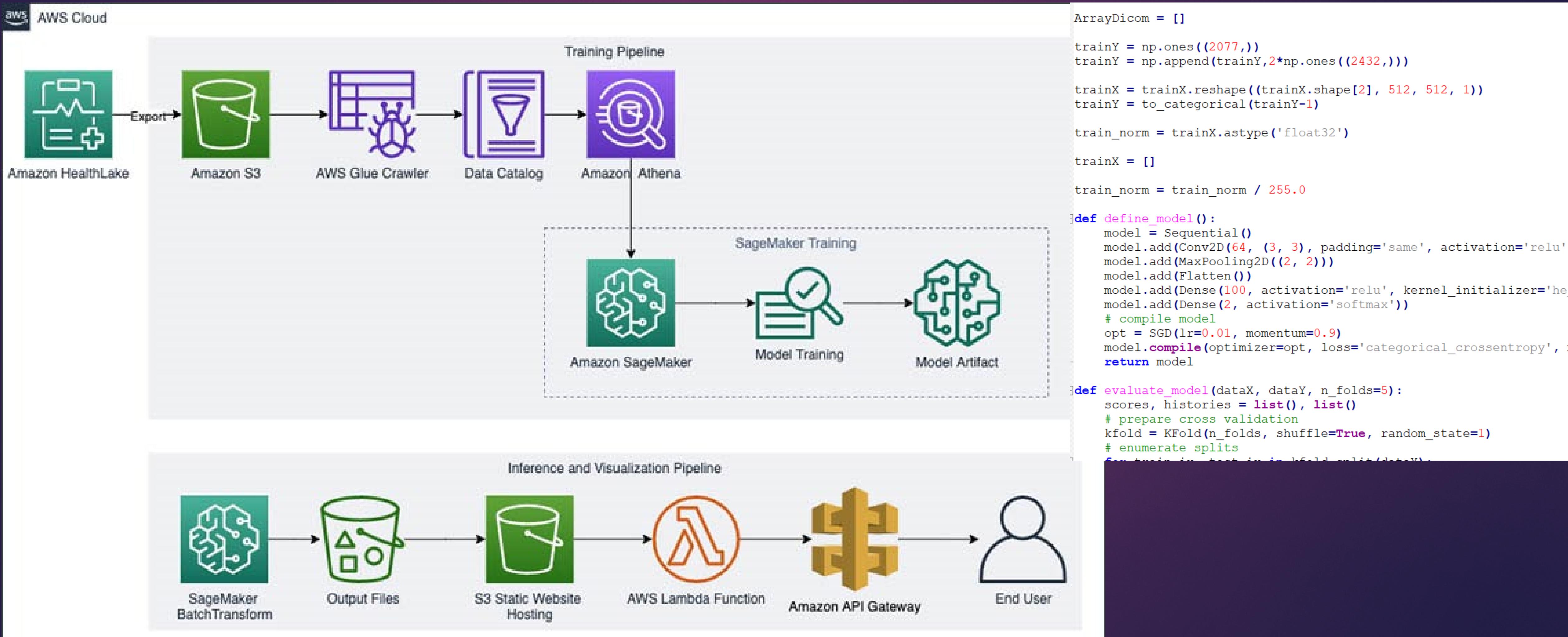
# Architecture





# Computer Vision driven Heart Attack Detection

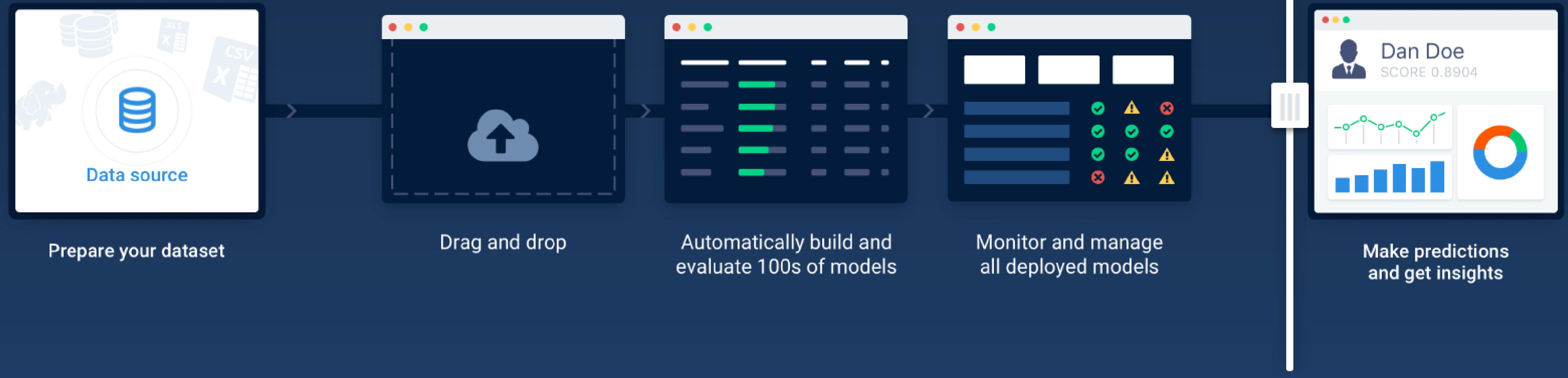
# Applied novel statistical learning and modelling techniques on CT imaging features for prediction of growth of Stanford Type B Aortic Dissection





MLCLOUDSTUDIO

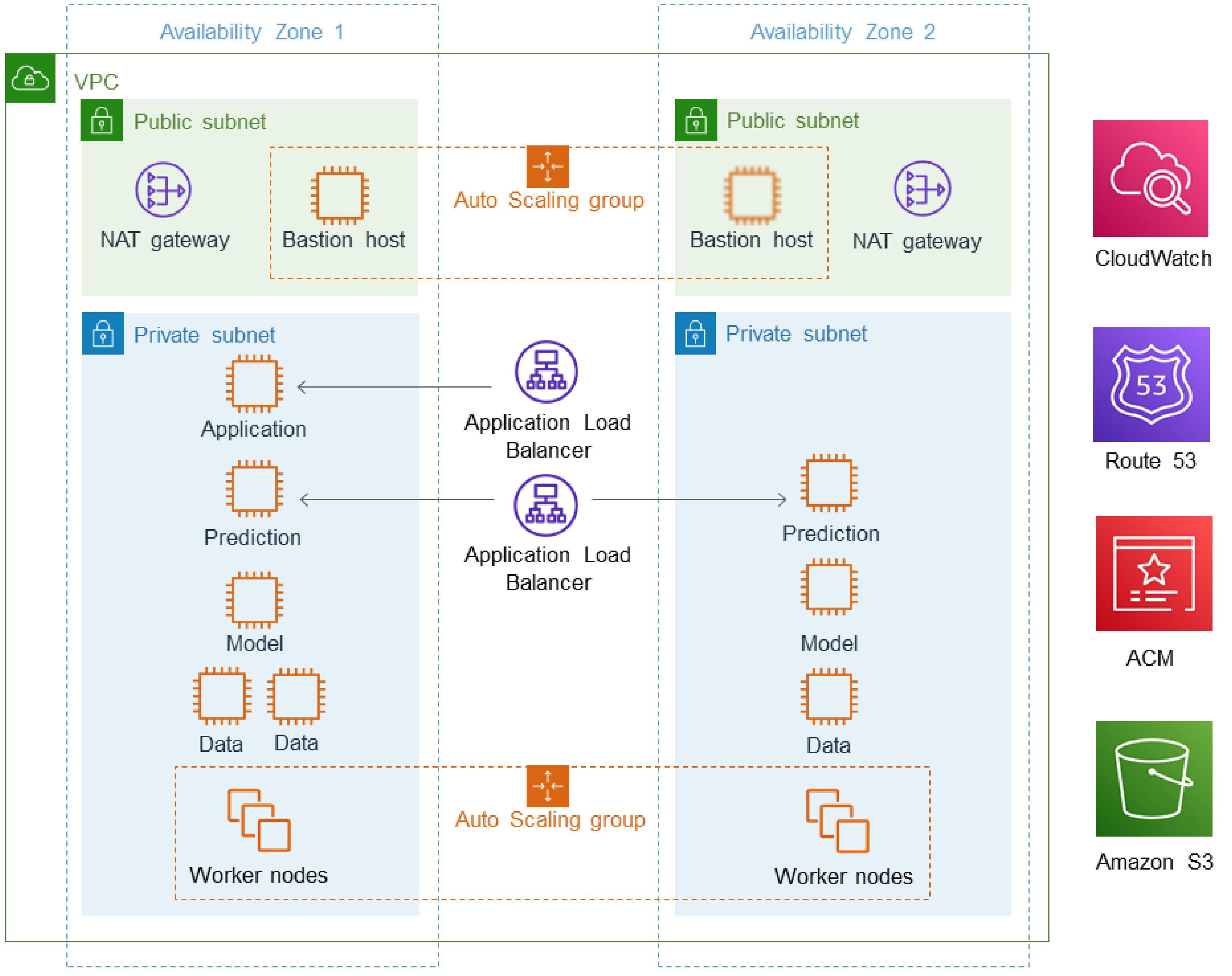
AUTO-ML PIPELINE



# MLCLOUDSTUDIO PIPELINE (5x Speed)



AWS Cloud



# Auto-ML Architecture

# Top 6 Features of Platform

1

## Sequence Mining Algorithms

*Number of Sequence mining algorithms written for Customer Journey Analytics for CRM*

2

## Auto-ML Libraries

*Number of Auto-ML libraries have been explored and solved problems like Predictive Lead Scoring*

3

## Chatbot using Open Source RASA

*We have developed couple of Chatbot engines like Solar DIY, GST Chatbot etc. using Open source RASA*

4

## AWS Algorithmic Scalability

*Any Complex ML Algorithm can be executed quickly through pre-defined ML Data Pipeline.*

5

## Data Scalability

*Algorithm with any data size can be executed using AWS S3 bucket.*

6

## NLP to SQL Engine

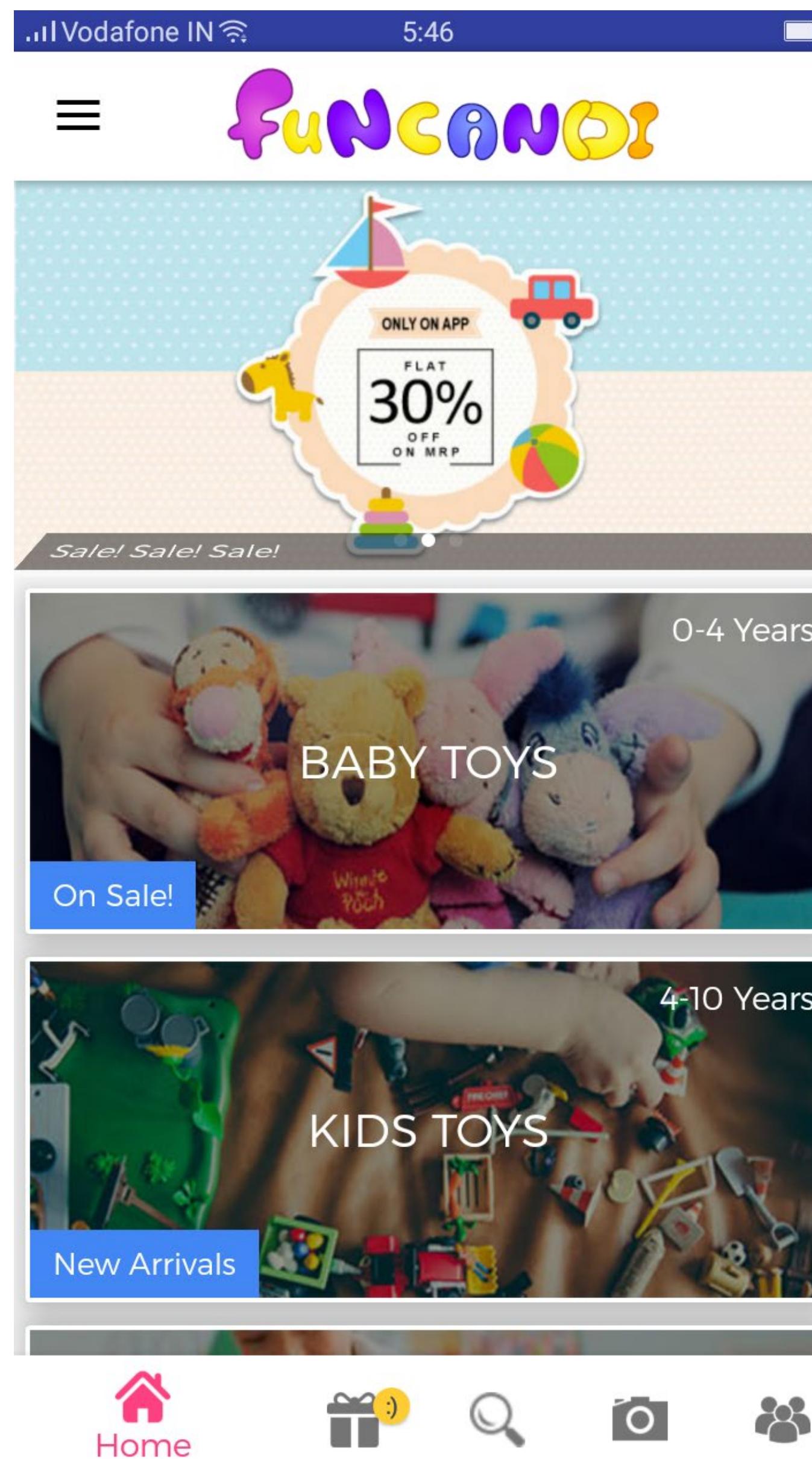
*Platform has been built for non-techie user so user can fire data query using plain English language.*

A photograph of a man with short brown hair, seen from behind, sitting on a large rock by a lake. He is wearing a dark blue zip-up jacket. The lake reflects the surrounding landscape, which includes snow-capped mountains in the distance under a sky filled with orange and blue clouds at sunset.

# FUNC AND GAME DEVELOPMENT

# Funcandi – M-Commerce & Career Analysis

funcandi®



# Patent Filing & Machine Learning driven Recommendations (Using Matrix Factorization Algorithm)

funCANDI®

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4. Ekta Sand never dries out and is gluten free. This soft and stretchy sand easily cleans up while delivering non-stop fun! It's squeezable sand you can't put down. Feel the difference with Ekta Sand!

The following patent applications have been published under section 11A (2) of The Patents (Amendment) Act 2005 and rule 24A of The Patents (Amendment) Rules, 2006. Any person may file representation by way of opposition to the Controller of Patents at the appropriate office against the grant of the patent in the prescribed manner under section 25(1) of the Patents (Amendment) Act 2005 read with the rule 55 of The Patents (Amendment) Rules, 2006:

(12) PATENT APPLICATION PUBLICATION (21) Application No.201711041968 A

(19) INDIA (43) Publication Date : 02/11/2018

(22) Date of filing of Application :23/11/2017

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ADD TO CART

(54) Title of the invention : TIME USAGE BASED RECOMMENDATION SYSTEM FOR IMPROVING A USER™S SKILL SET AND METHOD THEREOF

(51) International classification	:G06F11/27
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

(71)Name of Applicant :  
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Address of Applicant :B-4/103, Mayur Apartment, Sector-9, Rohini, Delhi-110085 Delhi India

(72)Name of Inventor :  
1)Renu Gupta

(57) Abstract :  
The present invention provides methods and system for improving a user™s, specially a child™s, skill set. The present invention enables a caregiver or specialist or parent/ guardian to take appropriate actions for enhancing a child™s skill and work upon the child™s deficiencies/ weaknesses. The present invention provides for recommending appropriate items, products, activities with an appropriate time of usage/ performance based on a child™s strength, weaknesses. A development plan with appropriate time lines for a child™s cognitive, social, emotional, and physical development.

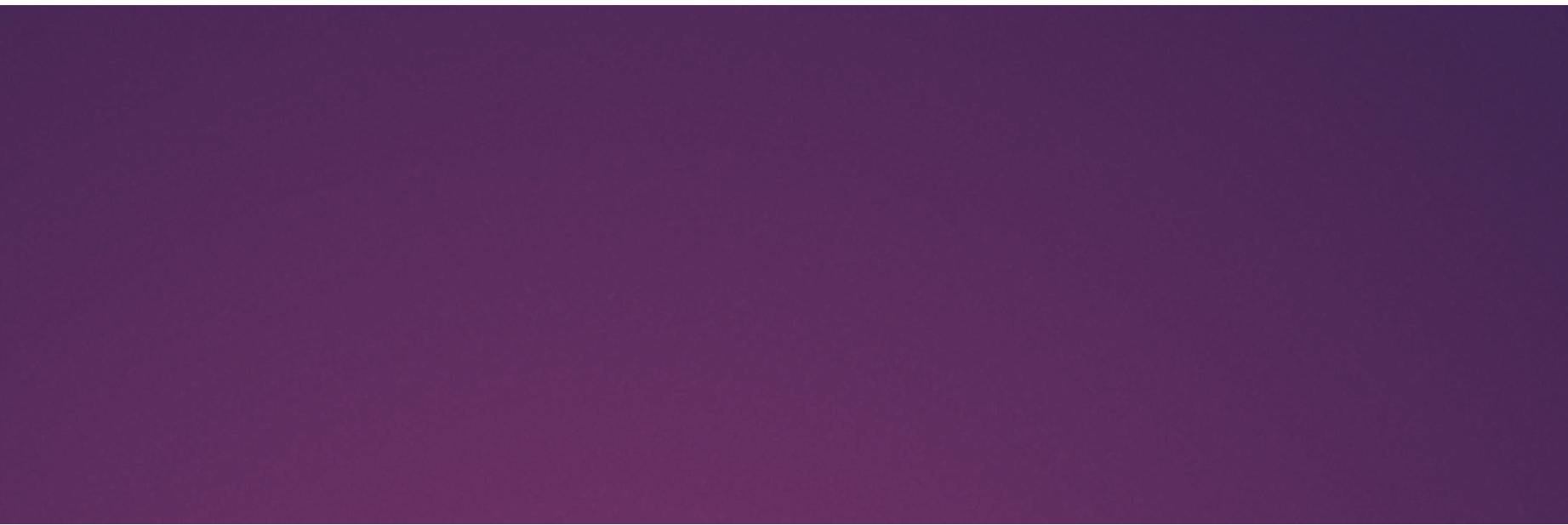
No. of Pages : 20 No. of Claims : 10

# AI/ Games Based Assessment Platform

Tomorrow4You

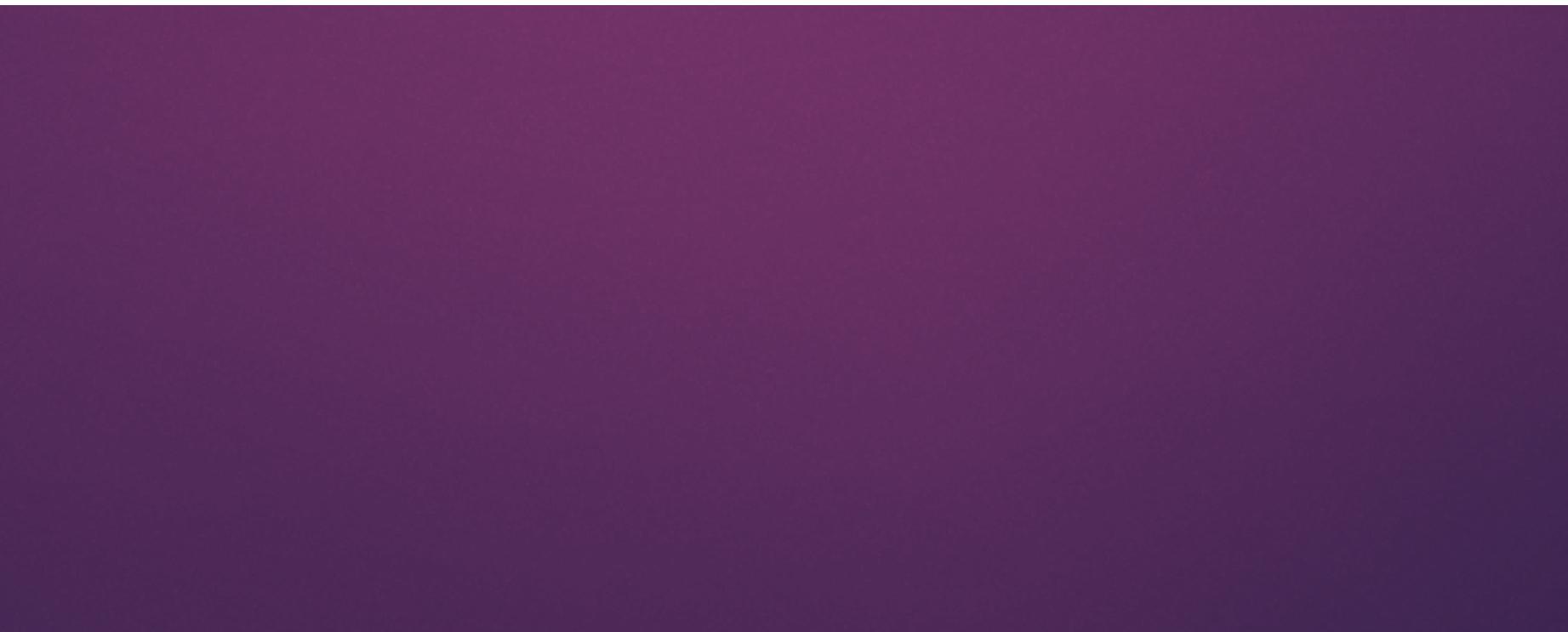


## NOT SURE ABOUT YOUR CAREER?



# TOMORROW4YOU

MAKE CAREER SUCCESS



Tomorrow4you helps you to choose the best career path for your successful future.



Find the best course based on your learning interests.



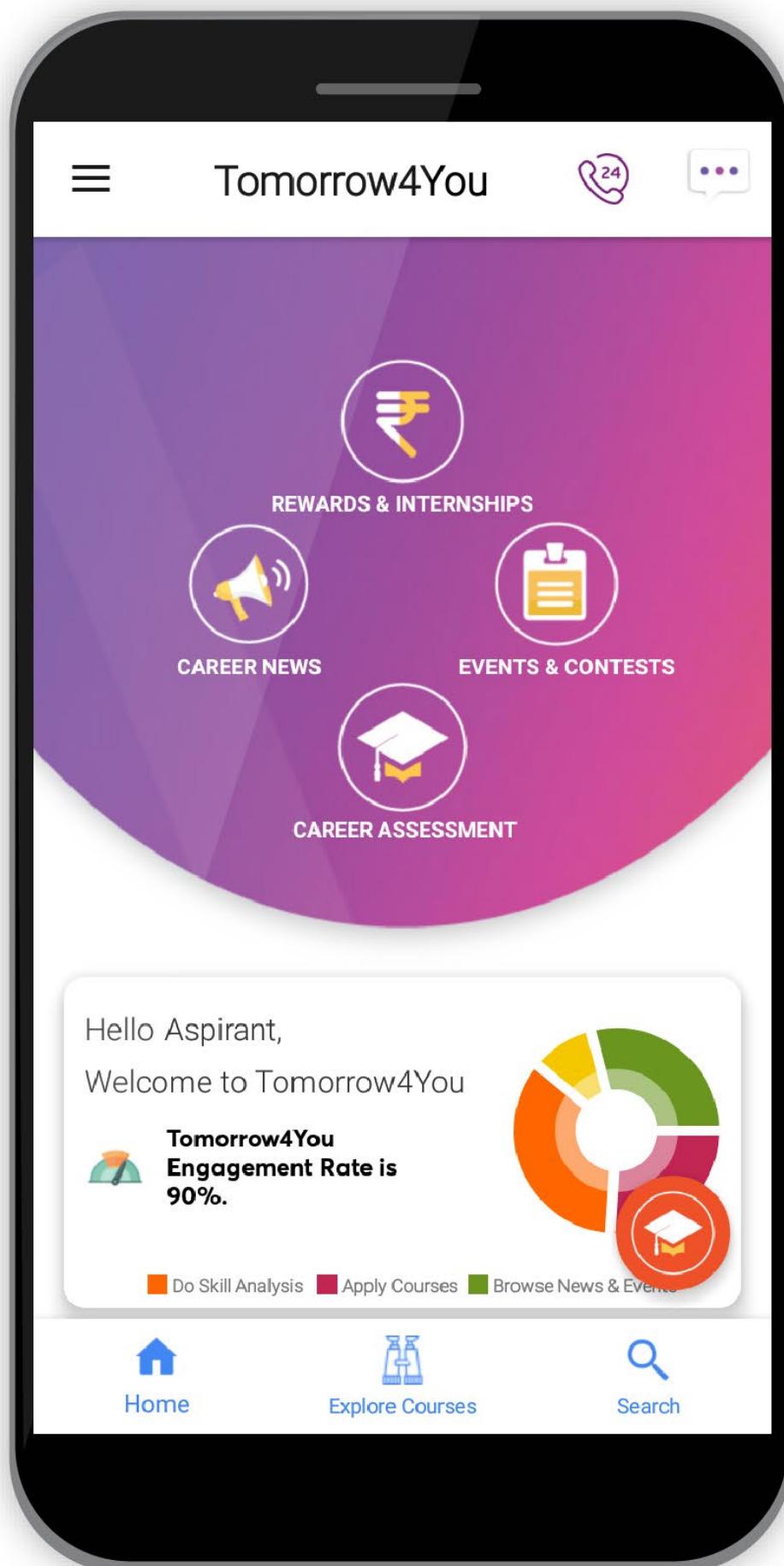
Compare different categories and find the best one based on your preferences.



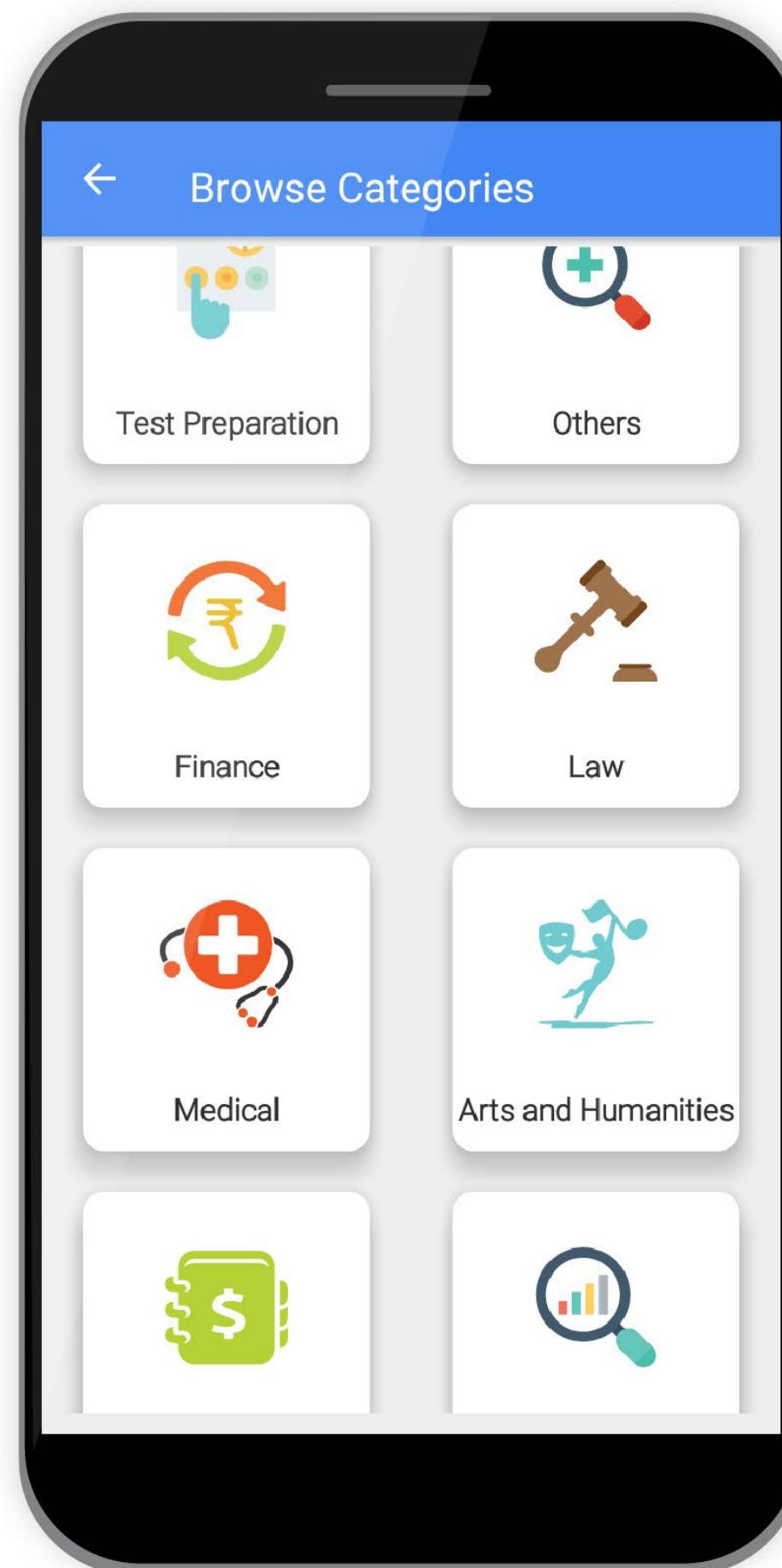
# Tomorrow4You – Quick Preview



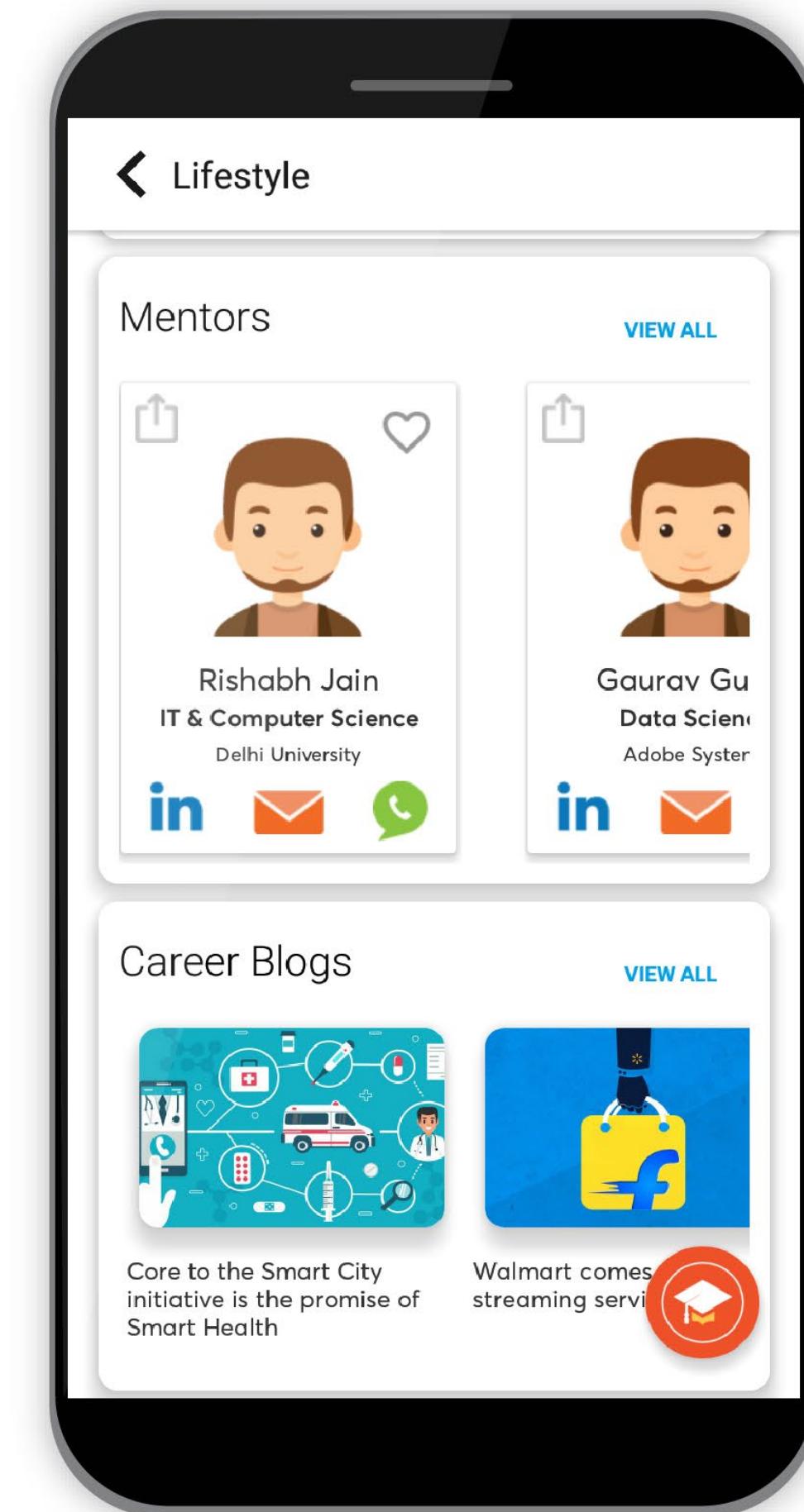
Homepage



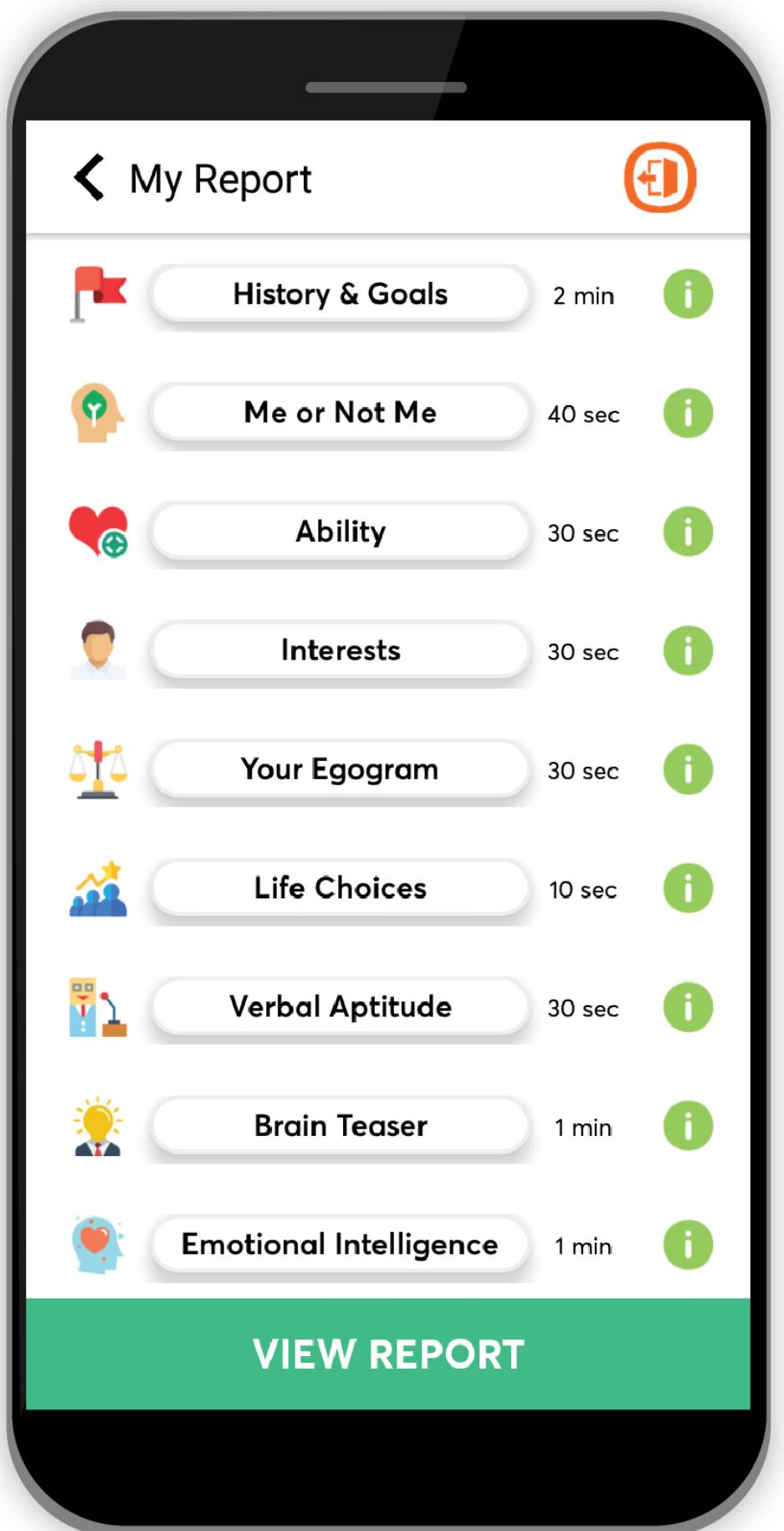
Categories



Mentors & Career Blogs



Assessment

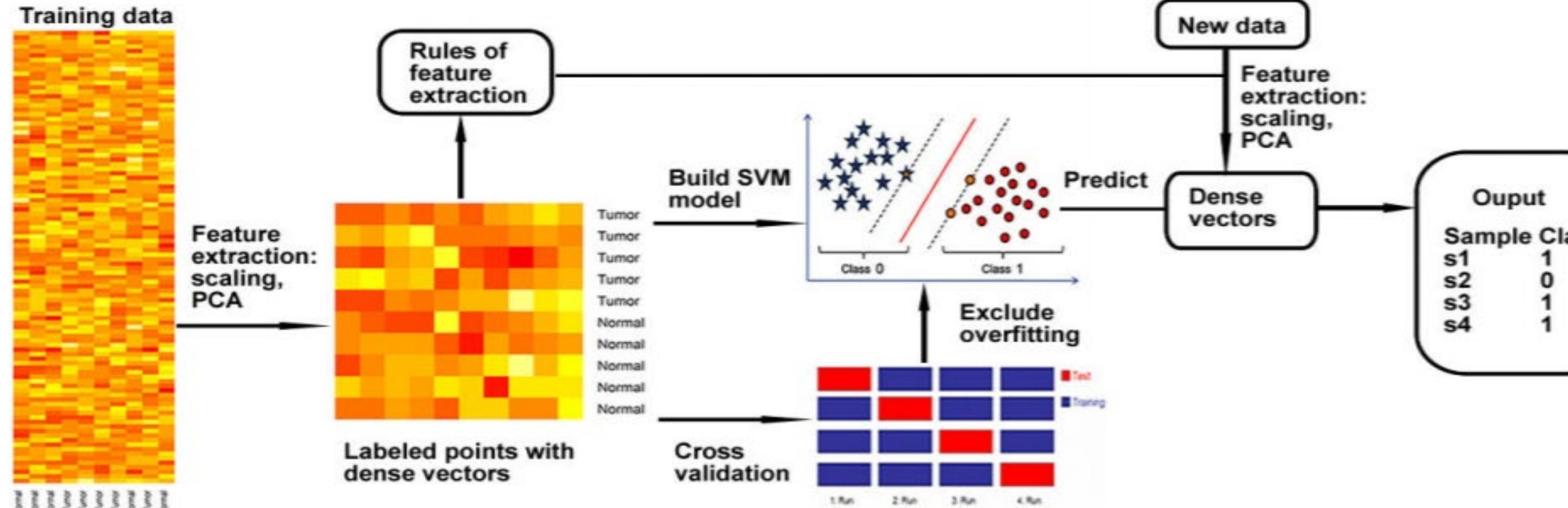


# Fraud Detection Software

Worker's Compensation Fraud in Insurance Industry

# Open Source Weighted Algorithm

**General flowchart**



```

def outlier_prediction_using_gradient_boosting(outlier_training_data, outlier_test_data):
    #Dropping Categorical Columns
    outlier_training_data= outlier_training_data.drop('Provider_Id')

    # Split the data into training and test sets (30% held out for testing of model)
    splits = [0.7, 0.3]
    training_data, test_data = outlierTrainingRDD.randomSplit(splits)

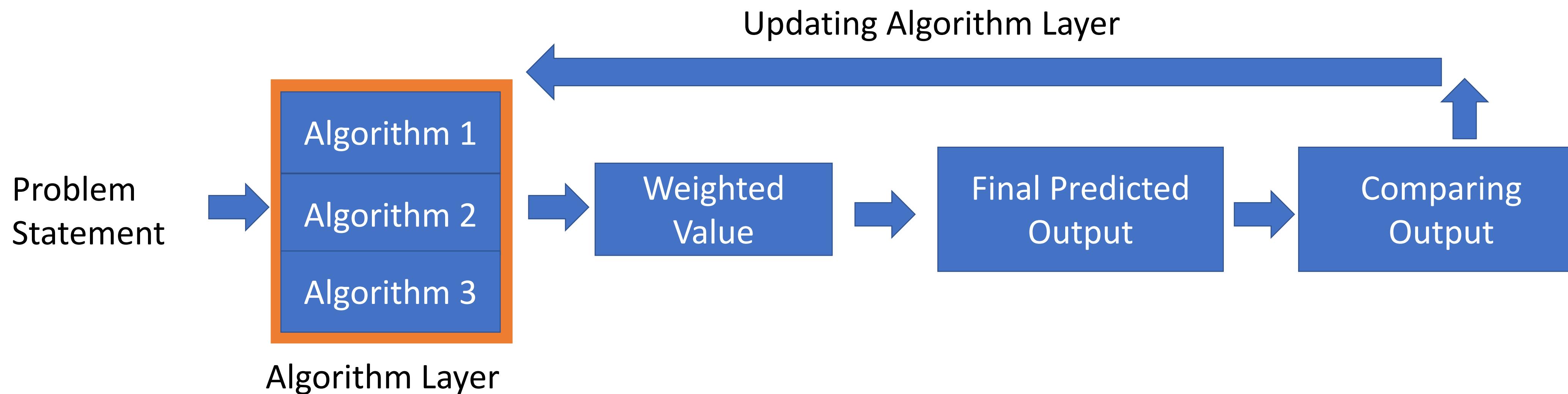
    # Building Gradient Boosting Model
    start_time = time()
    model = GradientBoostedTrees.trainClassifier(training_data,
                                                categoricalFeaturesInfo={},
                                                numIterations=3)
    end_time = time()
    elapsed_time = end_time - start_time
    print("Time to train model: %.3f seconds" % elapsed_time)
    print(test_data.take(5))
    print("Learned Classification Gradient Boosting Model")

    #Checking for Model Accuracy
    predictions = model.predict(test_data.map(lambda x: x.features))
    labels_and_predictions = test_data.map(lambda x: x.label).zip(predictions)
    model_accuracy = labels_and_predictions.filter(lambda x: x[0] == x[1]).count() / float(test_data.count())
    print("Model accuracy: %.3f%%" % (model_accuracy * 100))

    #Evaluating Model using F-Score and ROC Curve
    start_time = time()
    metrics = BinaryClassificationMetrics(labels_and_predictions)
    print("Area under Precision/Recall (PR) curve: %.f" % (metrics.areaUnderPR * 100))
    print("Area under Receiver Operating Characteristic (ROC) curve: %.3f" % (metrics.areaUnderROC * 100))
    end_time = time()
    elapsed_time = end_time - start_time
    print("Time to evaluate model: %.3f seconds" % elapsed_time)

    #Checking Outlier Flag for Test Data
    outlier_test_data_model=outlier_test_data
    outlier_test_data_model = outlier_test_data_model.drop('Provider_Id')
    outlierTestRDD = outlier_test_data_model.rdd.map(lambda row: Vectors.dense(row))
    predictions = model.predict(outlierTestRDD)

```



The background of the image is a photograph of a lush, green forest. The trees are tall and their trunks are covered in vibrant green moss. Sunlight filters down from the dense canopy of leaves, creating bright highlights and deep shadows. The overall atmosphere is serene and natural.

**THANK YOU**