


Internship Title : RSIP Career Basic ML 081  
 Project ID : SPS\_PRO\_288  
 Project Title : Chronic kidney disease prediction using Watson Auto AI  
 Duration : 16 Days  
 Internship Description : [Click here to view the Internship Description](#)  
 Team : 

Overall  
Project  
Progress

100%

Assigned  
Tasks  
Progress

100%

### ★ MENTOR INSTRUCTIONS

[HIDE](#)

- Click on Go to Workspace Option to access the Project Workspace.
- Total Internship duration is 1 month, within this time you have to complete the project in one week with expected outcome.
- References & Learning resources are provided for every activity.
- Your login and logouts to the workspace are monitored, it is mandatory to maintain 5-days a week attendance.
- All the project deliverables shall be pushed to GitHub Repository & daily work status shall be updated to mentor via Slack Channel.
- Use Zoho Writer to update the project documentation regularly.
- Individual activity status shall be updated in the Kanban Board without fail.
- Use the commenting option on the activity card to communicate with the mentor in case of any query, Mentor replies can be accessed from Mentor View tab.
- Once the mentor approves all activities, you have to capture a project demonstration video and upload to the GitHub.
- Your profile shall be filled completely to get the Internship Certificate; you can access the certificate anytime from the dashboard.

We wish you all the best!!

[Go to Git Repository](#)
[Go to Writer](#)
[Go to Slack Channel](#)

Note: Use password **AK6VmpY** to get access for writer

0 Days 5:13:5

#### PROJECT DETAILS

#### TASK & PROGRESS

#### MENTOR REVIEW



Chronic Kidney Disease  
Prediction Using Watson  
Auto AI

BASIC

## Chronic Kidney Disease Prediction Using Watson Auto AI

Category: Machine Learning

Skills Required:

Python, Python For Data Analysis, Python For Data Visualization Machine Learning, IBM Cloud, IBM Watson

Project Description:

Chronic Kidney Disease (CKD) is a major medical problem and can be cured if treated in the early stages. Usually, people are not aware that medical tests, we take for different purposes could contain valuable information concerning kidney diseases. Consequently, attributes of various medical tests are investigated to distinguish which attributes may contain helpful information about the disease. The information says that it helps us to measure the severity of the problem, the predicted survival of the patient. Hence, the better the disease



Dashboard

Upgrade Customize

Create resource +

Resource summary

View all

9 Resources

Cloud Foundry apps 1

Cloud Foundry services 1

Services 4

Storage 1

Apps 1

Developer tools 1

Add resources +

Planned maintenance

View all

Clear skies!  
You can view your scheduled maintenance events here.

For you

🕒

Get started with using AI and Cloud Object Storage in 15 minutes.

📖 Get Started with Watson Studio

Watson Assistant lets you build conversational interfaces into any application, device, or channel.

🗂 Use Watson Assistant

Refresh

FEEDBACK

News

View all

MEDIAPRO Uses IBM Watson to Create Personalized Soccer Experience

Sustainable Seafood Gets a Boost from IBM Blockchain Technology for Insight into the Journey from Sea to Table

IBM and SAP Announce New Offerings to Help Companies' Journey to the Intelligent Enterprise

IBM Security Study Finds Employees New to Working from Home Pose Security Risk

Recent support cases

View all

You can view a summary of your support cases here after you submit them. [Learn more about how to get support.](#)

User access

Manage users

Enter email addresses below to jump directly into the invite user setup:

Enter up to 100 email addresses

Invite +

IBM Cloud status

View all

No issues 🟢



## Resource list

Create resource



Name	Group	Location	Status
Filter by name or IP address...	Filter by group or org...	Filter...	Filter...
Devices (0)			
VPC Infrastructure (0)			
Clusters (0)			
Cloud Foundry apps (1)			
Cloud Foundry services (1)			
Services (4)			
Continuous Delivery	Default	Dallas	Active
Watson Studio-eb	Default	Dallas	Active
node-red-wvgsz-cloudant-1593...	Default	Chennai 01	Active
pm-20-fj	Default	Dallas	Active
Storage (1)			
Network (0)			
Cloud Foundry enterprise environments (0)			
Functions namespaces (0)			
Apps (1)			
Developer tools (1)			
VMware (0)			
Schematics workspaces (0)			

FEEDBACK



Upgrade

Monisha Moni's Account

MM

# Welcome Monisha!

Watson Studio • Watson Machine Learning

## Start by creating a project

A project is how you organize your resources to work with data and collaborate with team members.

### Create a project

Create a project, and then add the tools and assets you need.

## Recently updated projects

[View all \(1\)](#)[New project +](#)

Name	Role	Collaborators	Date created	Last updated
<a href="#">sample</a>	Admin		Jun 24, 2020	Jun 24, 2020

## Watson services

[View all \(1\)](#)[Add service +](#)

Instance name	Service	Plan	Tool
<a href="#">pm-20-fj</a>	<a href="#">Machine Learning</a>		

## New in gallery

[Explore](#)

NOTEBOOK

+

Dialog Flow Analysis for Watson Assistant

AUTHOR  
IBM

MODIFIED  
Jun 25, 2020

Communications

NOTEBOOK

+

Measure Watson Assistant Performance

AUTHOR  
IBM

MODIFIED  
Jun 18, 2020

DATA

Go Sample Dataset

AUTHOR  
IBM

MODIFIED  
Jun 18, 2020

Economy & Business

## Helpful links



IBM Watson Studio

Upgrade

Monisha Moni's Account

My projects / sample

Launch IDE

Add to project

Overview

Assets

Environments

Jobs

Deployments

What assets are you looking for?

Data assets

0 assets selected.

<input type="checkbox"/>	Name	Type	Created by	Last modified
<input type="checkbox"/>	csv datasets_1111_2005_kidney_disease.csv	Data Asset	Monisha Moni	Jun 24, 2020, 11:38 AM

Drop files here or browse for files to upload.

AutoAI experiments

New AutoAI experiment

Name	Status	Model type	Last modified
multilinear	Completed	Multiclass Classification	Jun 25, 2020, 08:15 PM

Deep learning experiments

New deep learning experiment

Name	Last Modified
------	---------------

You don't have any Deep learning experiments yet

Models

Watson Machine Learning model

Import model

Name	Type	Runtime	Last modified
multilinear - P5 RandomForestClassifierEstimator	wml-hybrid_0.1	hybrid_0.1	Jun 25, 2020



[My projects](#) / [sample](#) / [multilinear](#)

Experiment summary

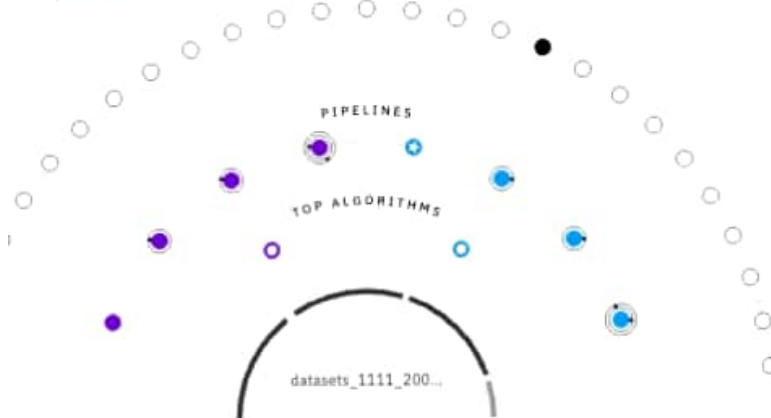
Pipeline comparison

Accuracy (Optimized) ▾

Cross validation

Holdout

Relationship map ⓘ

Prediction column: **classification** FEATURE TRANSFORMERS

Progress map

[Swap view](#)

Experiment completed ✓

8 PIPELINES GENERATED

8 pipelines generated from algorithms. See pipeline leaderboard below for more detail.

Time elapsed: 4 minutes

[View full log](#)

Pipeline leaderboard

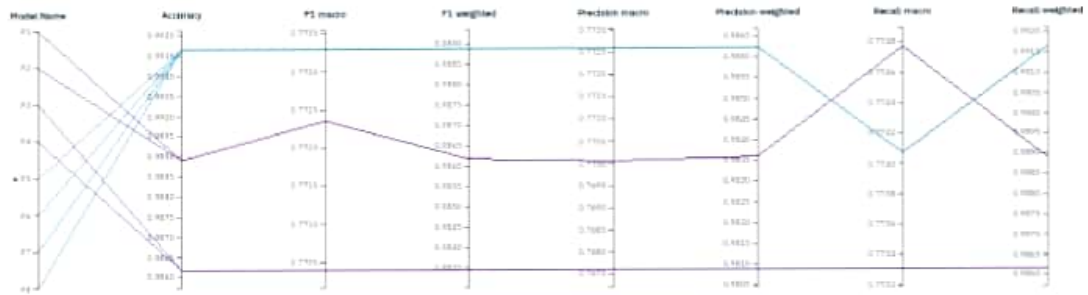
Rank ↑	Name	Algorithm	Accuracy (Opt...	Enhancements	Build time
> ★ 1	Pipeline 5	Random Forest Classifier	0.992	None	00:00:01
> 2	Pipeline 6	Random Forest Classifier	0.992	HPD-1	00:00:10
> 3	Pipeline 7	Random Forest Classifier	0.992	HPD-1 FE	00:00:37
> 4	Pipeline 8	Random Forest Classifier	0.992	HPD-1 FE HPD-2	00:00:24
> 5	Pipeline 1	Extra Trees Classifier	0.989	None	00:00:01
> 6	Pipeline 2	Extra Trees Classifier	0.989	HPD-1	00:00:09
> 7	Pipeline 3	Extra Trees Classifier	0.986	HPD-1 FE	00:00:34
> 8	Pipeline 4	Extra Trees Classifier	0.986	HPD-1 FE HPD-2	00:00:15



## Metric chart



Prediction column: classification



## Pipeline leaderboard

Rank ↑	Name	Algorithm	Accuracy (Opti...	F1 macro	F1 micro	F1 weigh...	Precision...	Precis
★ 1	Pipeline 5	Random Forest ...	0.992	0.773	0.992	0.989	0.773	0.992
2	Pipeline 6	Random Forest ...	0.992	0.773	0.992	0.989	0.773	0.992
3	Pipeline 7	Random Forest ...	0.992	0.773	0.992	0.989	0.773	0.992
4	Pipeline 8	Random Forest ...	0.992	0.773	0.992	0.989	0.773	0.992
5	Pipeline 1	Extra Trees Cla...	0.989	0.772	0.989	0.986	0.770	0.989
6	Pipeline 2	Extra Trees Cla...	0.989	0.772	0.989	0.986	0.770	0.989
7	Pipeline 3	Extra Trees Cla...	0.986	0.770	0.986	0.983	0.768	0.986
8	Pipeline 4	Extra Trees Cla...	0.986	0.770	0.986	0.983	0.768	0.986



Deployments

Name	Type	Status	Actions
multii	Web Service	Ready	





My projects / sample / multilinear - P5 RandomForestCL... / multil

## multil

Overview

Implementation

Test

### Deployment

Name	multil
Type	Web Service
Deployment ID	f091c543-5547-4377-ae0c-a940e6b5ce6b
Status	Ready
Asset type	Model
Asset name	multilinear - P5 RandomForestClassifierEstimator
Machine learning service	pm-20-fj
Created	Jun 28, 2020 2:59 PM
Last modified	Jun 28, 2020 2:59 PM

### Model

Name	multilinear - P5 RandomForestClassifierEstimator
ID	553665c4-efdb-437c-bdc8-ee68aa16fc06
Version ID	e3f6918a-d3ec-45ae-9bc8-10115928921e





## multil

Overview

Implementation

Test

## Implementation

[View API Specification](#)

Scoring End-point	<a href="https://us-south.ml.cloud.ibm.com/v4/deployments/f091c543-5547-4377-ae0c-a940e6b5ce6b/predictions">https://us-south.ml.cloud.ibm.com/v4/deployments/f091c543-5547-4377-ae0c-a940e6b5ce6b/predictions</a>
Authorization: Bearer <token>	Review the <a href="#">WML authentication</a> documentation for details about generating IAM tokens.
ML-Instance-ID	The "ML-Instance-ID" HTTP header must be populated with the WML instance id, which can be obtained as <a href="#">described here</a>
Content-type: application/json	Required if the request body is sent in JSON format.

## Code Snippets

cURL	Java	JavaScript	Python	Scala
<pre># TODO: manually define and pass values to be scored below curl -X POST --header 'Content-Type: application/json' --header 'Accept: application/json' --header 'Authorizati:</pre>				



## multil

Overview

Implementation

Test

### Enter input data



No

appet

Poor

pe

Yes

ane

Yes

Predict

```
{
  "predictions": [
    {
      "fields": [
        "prediction",
        "probability"
      ],
      "values": [
        [
          "ckd",
          [
            1,
            0,
            0
          ]
        ]
      ]
    }
  ]
}
```





## Resource list

Create resource +



Name	Group	Location	Status
Filter by name or IP address...	Filter by group or org...	Filter...	Filter...
Devices (0)			
VPC infrastructure (0)			
Clusters (0)			
Cloud Foundry apps (1)			
Node RED WVG SZ	monishakambar2000@gmail.co...	London	Started
Cloud Foundry services (1)			
Services (4)			
Storage (1)			
Network (0)			
Cloud Foundry enterprise environments (0)			
Functions namespaces (0)			
Apps (1+)			
Developer tools (1)			
VMware (0)			
Schematics workspaces (0)			



## Resource list

Create resource



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Filter by name or IP address...	Filter by group or org...	Filter...	Filter...
Devices (0)			
VPC infrastructure (0)			
Clusters (0)			
Cloud Foundry apps (1)			
Node RED WVG5Z	monishakambar2000@gmail.co...	London	Started
Cloud Foundry services (1)			
Services (4)			
Storage (1)			
Network (0)			
Cloud Foundry enterprise environments (0)			
Functions namespaces (0)			
Apps (1+)			
Developer tools (1)			
VMware (0)			
Schematics workspaces (0)			



## Node-RED on IBM Cloud

# Node-RED

Flow-based programming for the Internet of Things

Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways.

This instance is running as an IBM Cloud application, giving it access to the wide range of services available on the platform.

More information about Node-RED, including documentation, can be found at [nodered.org](http://nodered.org).

[Go to your Node-RED flow editor](#)

[Learn how to customise Node-RED](#)

## Customising your instance of Node-RED

This instance of Node-RED is enough to get you started creating flows.

You may want to customise it for your needs, for example replacing this introduction page with your own, adding http authentication to the flow editor or adding new nodes to the palette.

To start customising your instance of Node-RED, you can either download the application locally or use IBM DevOps Services to edit and deploy your changes directly.

+ Securing the editor

+ Enabling Application Metrics for Node.js monitoring

+ Adding new nodes to the palette



Node-RED

Deploy

filter nodes

Flow 1

Flow 2

Flow 2

+

≡

info

ⓘ

⚙

⌵

common

inject

debug

complete

catch

status

link in

link out

comment

function

function

switch

change

range

template

delay

trigger

OpenWhisk

rbe

network

mqtt in

mqtt out

http in

http response

http request

websocket in

websocket out

tcp in

tcp out

tcp request

udp in

udp out

output

OpenWhisk

sequence

split

join

Information

Flow

cd475fee 24c95

Name

Flow 1

Status

Disabled

Description

Show the info tab with `ctrl i` or the Debug tab with `ctrl d`

⊘ Flow 1

Flow 2

Flow 2 ▶







## Default

classification	ckd
st	
3	
age	
48	
bp	
70	
sg	
1.005	
al	
4	
su	
0	
rbc	
normal	
pc	
abnormal	
pcc	
present	
ba	
notpresent	
bgr	
117	
bu	
56	
sc	
3.8	
sod	
111	
pot	
2.5	
hemo	
11.2	
pcv	
32	
wc	
6700	
re	
3.9	
htn	
yes	
dtn	
no	
cad	
no	
appet	
poor	
pe	
yes	
ane	
yes	

SUBMIT

CANCEL