

Progress Presentation-II

e-Yantra Summer Internship-2018
Machine Learning and It's Application

Swapnil Masurekar
Abhishek Sharma
Mentors: Rutuja, Suprabha

IIT Bombay

June 21, 2018

Overview of Project

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

Task
Accomplished

Challenges Faced

Future Plans

Thank You

- Project Name : **Machine Learning and It's Application**
- Objective : To study machine learning and to work on its practical applications of Character Recognition, Automated Reply, Face Recognition along with documentation
- Deliverables :
 - 1 Learning ML and implement Applications
 - 2 Well commented code and documentation

Overview of Task

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

Task
Accomplished

Challenges Faced

Future Plans

Thank You

Task no.	Task	Status
Week 1		
1	Learning Basics of ML	Completed
2	Get familiar with Tensorflow(and python)	Completed
Week 2		
3	Character recognition using LR	Completed
4	Character recognition using neural network	Completed
Week 3 and Week 4		
5	Automated Reply System	Completed
Week 5		
6	Face Recognition	Ongoing
Week 6		
7	Documentation	Ongoing

Improvisations in Character Recognition

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

Task
Accomplished

Challenges Faced

Future Plans

Thank You

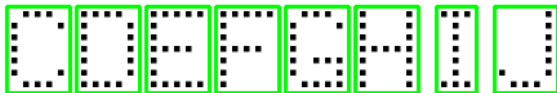
- Further expanding Dataset with Morphological transformations
- Sentence detection:



(x=284, y=1) ~ R:255 G:255 B:255

Results from Convolutional Neural Network: ====> TH1S IS A SENTENCE

- Dotted Character Recognition:



(x=312, y=62) ~ R:255 G:255 B:255

Results from Convolutional Neural Network: ====> CDEFGHIJ

Text Processing

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

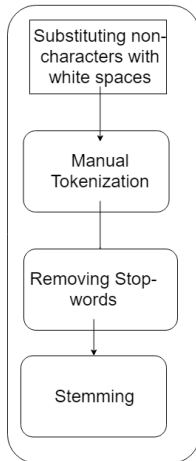
Task
Accomplished

Challenges Faced

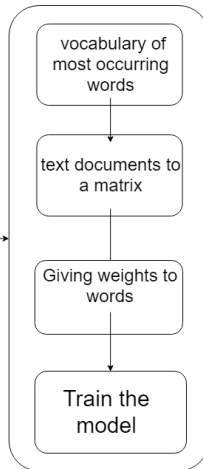
Future Plans

Thank You

Cleaning Text Data



Creating Bag of words model



Automated Reply: Category Classification

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

Task
Accomplished

Challenges Faced

Future Plans

Thank You

Gaussian Naive Bayes

- To label the mail in gmail inbox

Nearest Neighbor

- To generate the reply for the query



Automatic Mail Labeling using Gmail API

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

Task
Accomplished

Challenges Faced

Future Plans

Thank You

The screenshot displays a Gmail interface with a sidebar on the left and a main inbox area. The sidebar shows a list of labels: 'Drafts' (4), 'Spam', 'battery', 'certificate' (1), and 'others'. The main inbox area shows a list of emails with their subjects and dates. The labels 'battery' and 'certificate' are applied to specific emails, as indicated by the red box and the yellow labels in the email subjects.

Label	From	Subject	Date
battery	Suprabha Jadhav	battery FB V - Hi Sir/ Ma'am Battery is not working. Can i use auxiliary power.	Jun 19
certificate	SWAPNIL MASUREKAR	certificate - When would i get certificate ?	Jun 19
certificate	SWAPNIL MASUREKAR	certificate - When would we get certificate ?	Jun 18
battery	abhishek sharma 2	battery issue - I have completed stage 1 I just wanted to know m I eligible for participasion or not	Jun 18
battery	abhishek sharma	battery issue - Our drone goes above a height of 30 cm only for about 5 seconds on full charge, afte...	Jun 18
battery	abhishek sharma	battery issue - battery got damaged so where to buy new battery	Jun 18
others	abhishek sharma	problem - firebird servo motor is not working	Jun 18
others	abhishek sharma	Issue - my firebird bootloader is not working , I am unable to uplod mt programme in it	Jun 18
certificate	SWAPNIL MASUREKAR	certificate - Hello I haven't received certificate yet , when would i get certificate ?	Jun 18
Help us protect you: Security advice from Google	Google	machine learning Turn off less secure access lea...	Jun 17
certificate	rutuja ekatpure	(no subject) - Hi sir, I have completed stage 1 I just wanted to know m I eligible for partici...	Jun 15
certificate	rutuja ekatpure	Team id #56 - Hi sir, I have completed stage 1 I just wanted to know m I eligible for partici...	Jun 15

Figure: Automatic Mail Labeling using Gmail API



Automated Reply to E-mail query

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

Task
Accomplished

Challenges Faced

Future Plans

Thank You

Certificate  Inbox



SWAPNIL MASUREKAR

to learningml18

[Hide details](#)

From: SWAPNIL MASUREKAR swapnil3597@gmail.com

To: learningml18@gmail.com

Date: Jun 15, 2018, 3:24 PM

[View security details](#)

Are we eligible for letter of participation



learningml18@gmail.com

to me

[Hide details](#)

From: learningml18@gmail.com

To: swapnil3597@gmail.com

Date: Jun 15, 2018, 3:24 PM

[View security details](#)

Check the portal for eligibility, if eligible you will receive certificates and goodies by end week of april

regarding power supply  Inbox



abhishek sharma

to learningml18

[Hide details](#)

From: abhishek sharma ssshivalayabi@gmail.com

To: learningml18@gmail.com

Date: Jun 20, 2018, 3:16 PM

[View security details](#)

battery burnt due to heating so can we use power supply



learningml18@gmail.com

to me

[Hide details](#)

From: learningml18@gmail.com

To: ssshivalayabi@gmail.com

Date: Jun 20, 2018, 3:17 PM

[View security details](#)

you can use auxillary power supply, but during finals you have to use battery

Challenges Faced

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

Task
Accomplished

Challenges Faced

Future Plans

Thank You

- Word Embeddings (word2vec)
- Finding best approach for finding most similar query to current query from Dataset:
 - 1 Sentence Similarity Based on Semantic Nets and Corpus Statistics
 - 2 Using Recurrent Neural Network for sequence classification
- Getting used to Gmail API
- Dotted Character Detection

Future Plans

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

Task
Accomplished

Challenges Faced

Future Plans

Thank You

- Optical Character-Recognition:
 - Detection of characters on ruled pages
 - Improvement in accuracy
- Face - Recognition

Thank You

Progress
Presentation-II

Swapnil
Masurekar
Abhishek Sharma
Mentors: Rutuja,
Suprabha

Overview of
Project

Overview of Task

Task
Accomplished

Challenges Faced

Future Plans

Thank You

THANK YOU !!!