Proposal and Feasibility Presentation

Automatic Image Captioning to Help Blind People of Pakistan

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Agenda of the Presentation

✓ Motivation
✓ Brief Introduction
✓ Scope
✓ Functionalities
✓ Tools and Technologies
✓ Feasibility

    (1)   Technical Feasibility
    (2)   Resource Feasibility
    (3)   Financial Feasibility
    (4)   Operational Feasibility

✓ Conclusion

Motivation

✓ In 2017 estimated more than 2.21 million people in Pakistan are blind or have Severe Visual Impairment.

✓ They rely on people to help them navigate in their surroundings.

✓ The traditional tools and techniques are not very useful since it takes a person to be available from them.

✓ However, with the help of the Automatic image Captioning Application for blind people they can do their daily tasks.

Brief Introduction

- ✓ In Pakistan, people with visual impairment face many hurdles in performing day to day to the task.

- ✓ They must have to estimate the state of the object.

- ✓ The project aims to manually develop a Cross-Platform application that can help blind people perform daily tasks easily.

Brief Introduction Continued

- ✓ Our system will be implemented in python and a Cross-platform flutter application.

- ✓ The detection system will be implemented in Python using libraries such as TensorFlow and Keras.

- ✓ The Detection and classifier we are using to detect the state of the object from the picture are VGG-16.

- ✓ Cross-platform flutter application will provide an interface for users to interact with the System.

Scope

- ✓ Cross-platform Based Application

- ✓ This detection system's scope is limited.

- ✓ Any source like cameras takes random pictures of objects and send them to the model for checking result after processing the model it gives result.

Objects and Activities

➢ **It can identify**
1) Pakistan currency
2) Vehicle
3) Person
4) Street signs
5) Electronics

➢ **Activities**
1) Door is open
2) Refrigerator is open
3) Someone is eating Food
4) Someone is cooking Food
5) Someone is ironing the clothes
6) Someone is working on a laptop
7) Someone is Sleeping
8) Someone is playing Cricket
9) Someone is doing Gym
10) Someone is using Phone

Functionalities

- ✓ Capture Image
- ✓ Generate Urdu Captions
- ✓ Caption to speech

Proposed Tools/Platform

Tools	Version	Rationale
Android Studio/ Vs code	4.1/1.50.1	IDE
Firebase	Latest	Database
MS Power Point	Microsoft 360 pro plus	Presentation
Adobe XD/ Figma	32.0	Designing Mockups
MS Word	Microsoft 360 pro plus	Documentation
MS Excel	Microsoft 360 pro plus	Project Management, Gantt chart
Python	3.8	Programming Language
MS Visio	Microsoft 360 pro plus	Diagramming Tool

Feasibility

- Technical feasibility

✓ All the mentioned Tools and Technologies are freely available.

Feasibility

- Financial feasibility
  - ✓ Most of the tools and technologies we are using a freely available to us.

  - ✓ There is an app publishing fee of $25 dollars on Google play store and $99 for the Apple store in case we publish it.

Feasibility

- Resource feasibility

  we always have the following resources available to us.

  ✓ PCs/Laptops
  ✓ Smart Phones

Feasibility

- Operational feasibility

  ✓ They need to be literate enough to use the Application.

Schedule

Automatic Image Captioning to Help Blind People of Pakistan					
TASK NAME	**STATUS**	**DURATION**	**START DATE**	**FINISH DATE**	**STATUS**
Project Selection	Complete	3 days	Mon 14/03/22	Wed 16/03/22	Not Started
Documentation	In Progress	150 days	Thu 17/03/22	Wed 12/10/22	In Progress
Proposal and Feasibility Report (10%)	Complete	8 days	Thu 17/03/22	Mon 28/03/22	Complete
SRS	In Progress	10 days	Tue 29/03/22	Mon 11/04/22	
Identify Currency	Not Started	15 days	Tue 12/04/22	Mon 02/05/22	
UseCase Diagram	Not Started	10 days	Tue 03/05/22	Mon 16/05/22	
Class Diagram	Not Started	10 days	Tue 17/05/22	Mon 30/05/22	
Sequence Diagram	Not Started	10 days	Tue 31/05/22	Mon 13/06/22	
identify 5 Objects	Not Started	10 days	Tue 14/06/22	Mon 27/06/22	
30% Presentation	Not Started	11 days	Tue 28/06/22	Tue 12/07/22	
Data Flow Diagram	Not Started	8 days	Wed 13/07/22	Fri 22/07/22	
Block Diagram	Not Started	8 days	Mon 25/07/22	Wed 03/08/22	
Activity /State Machine Diagram	Not Started	7 days	Thu 04/08/22	Fri 12/08/22	
Analyze Module	Not Started	15 days	Mon 15/08/22	Fri 02/09/22	
Integration of Model in Application	Not Started	15 days	Mon 05/09/22	Fri 23/09/22	
identify 5 Remaining Objects	Not Started	10 days	Mon 26/09/22	Fri 07/10/22	
60% Presentation	Not Started	12 days	Mon 10/10/22	Tue 25/10/22	
Identify 10 Activities	Not Started	7 days	Wed 26/10/22	Thu 03/11/22	
Package Diagram	Not Started	7 days	Fri 04/11/22	Mon 14/11/22	
Deployment Diagram	Not Started	10 days	Tue 15/11/22	Mon 28/11/22	
Thesis	Not Started	5 days	Tue 29/11/22	Mon 05/12/22	
100% Presentation	Not Started	2 days	Mon 05/12/22	Wed 07/12/22	

Tasks for 1st Iteration (or 30%)

✓ Documentation

➢ **Identify 5 Objects**

➢ **It can identify**
✓ Pakistan currency
✓ Vehicle
✓ Person
✓ Street signs
✓ Electronics

Conclusion

✓ Develop Cross-platform flutter Applications to help the visually impaired in recognizing in state of the object.

✓ Testing methodology to an Android and IOS-based service.