

Proposal and Feasibility

Urdu Caption For Blind Peoples:

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Agenda of the Presentation

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- Proposal Tools Platform
- Feasibility
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Motivation

- In 2017 more than **2.21 million [1] people** in Pakistan are
 - blind
 - Sever Visual Impairment
- **Advancement in Computer Vision** after 2015
 - Constitutional Neural Network
 - You Only Look Once Algorithm (YOLO)
- Growth of Smartphone Market In Pakistan
- **Lack Computer Vision work on Urdu** that Includes
 - Image Captioning
 - Object Recognition

Brief Introduction

- Visual impairment Difficulties:
 - Recognizing object State
 - Identifying the object
- Objectives:
 - Develop Urdu Captioning Model
 - Visual Impairment Helper as a Cross Platform application
- Users:
 - Urdu Speaking People

Scope

- **What to do?**
 - Data Collection, Model Creation And Application Deployment
 - Data Collection Limited to Person, Vehicle, Pakistani Currency, Furniture, Appliances, Street Signs, Kitchen and Electronics.
 - Cross platform application will be the final product which will run on IOS and Android
- **What not to do?**
 - Model will not be deployed on Cloud
 - It is not a general purpose model hence images is not collected other than above categories.
 - This project does not deal with natural language processing.
 - Caption detection will is not real time instead when user capture the image.
 - Application is not built using native platforms

Functionalities

- It can identify
 - Vehicle
 - Pakistani Currency
 - Persons
- Tell the state of
 - Appliances
 - Street Signs
 - Kitchen
 - Electronics
- Convert Caption into Urdu Audio

Proposed Tools/Platform

Tools/Platform	Version	Use
Android Studio	2021	IDE
Vs-Code	2021	Editor
Google Collab		Cloud Editor
Flutter/Dart	2.17x	Framework
Figma		Mock-up
Ms Word	365	Documentation
MS Powerpoint	365	Presentations
Github		VCS
MS Project	365	Project Management
Python	3.x	Language

Feasibility

Technical feasibility

- Available Computer Vision Technology
- Python Developer
- Flutter Developer
- GPU

Feasibility

- Financial feasibility
 - GPU Cost
 - Software Costs
 - Hardware Costs
 - License Costs
 - Publishing Costs

Feasibility

- Resource feasibility
 - Availability of GPU
 - Resources for Datasets creation
 - Man power creating Datasets in Time
 - Time required for developing Datasets
 - Time required for developing Application

Feasibility

Operational feasibility

- Urgency of developing.
- Is Application operation for blind people.
- Similar Software
 - Be My Eye (1 million Users)
 - Sullivan+

Schedule

- *Gantt Chart (using OpenProj or OpenProject [<https://www.openproject.org/>])*

Tasks for 1st Iteration (or 30%)

- *What will be completed as per Gantt Chart*

Conclusion

- Develop Cross platform Application
- Help visually impaired in recognizing in state of object
- Creating Urdu Caption Data Set of Images
- Training a Model on convolution neural network (CNN)
- Integrating model and application