# Telepresence Robot With AI for Earthquake

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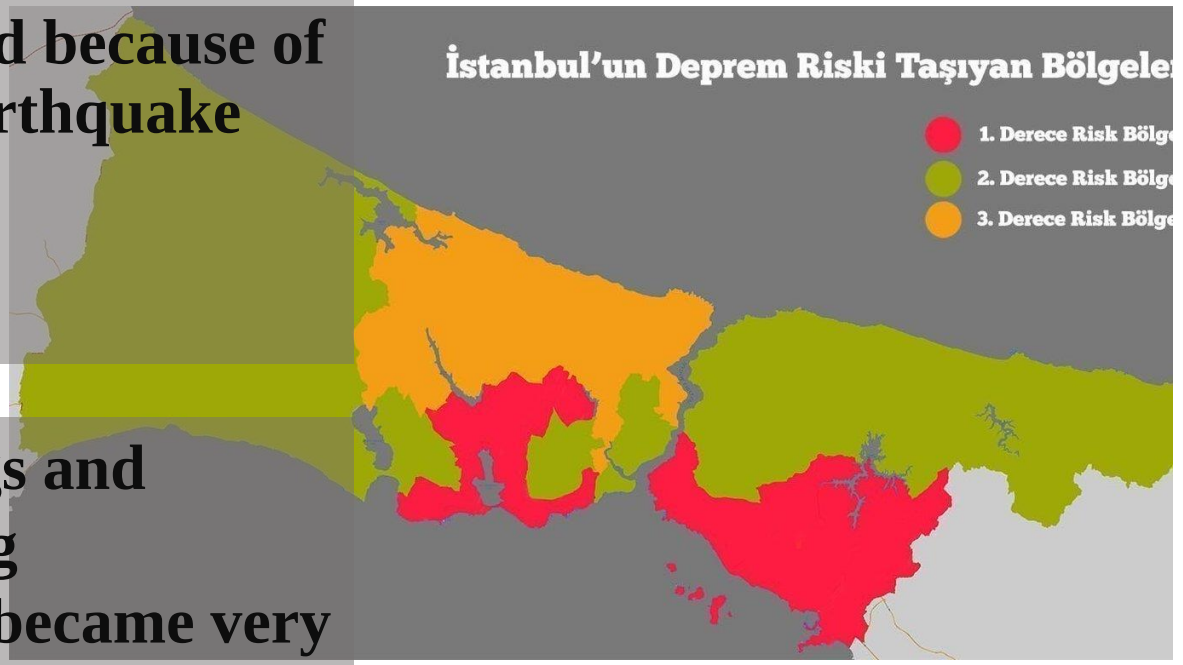
# Introduction

- First of all,I live in Istanbul.As you know Istanbul is the most populous city in Turkey.16 million people live in there.The city also has many building attached because of population. Istanbul is a city located in the earthquake zone and it is too hard to inspect all of these buildings,especially for earthquake.




Moreover people worry a lot about the buildings and neighborhoods they live in.In the last harrowing earthquake,especially people living in Istanbul became very uneasy.Even most of the people still can not sleep because of the anxiety.Being able to constantly access up to date information and documents may give people some relief.

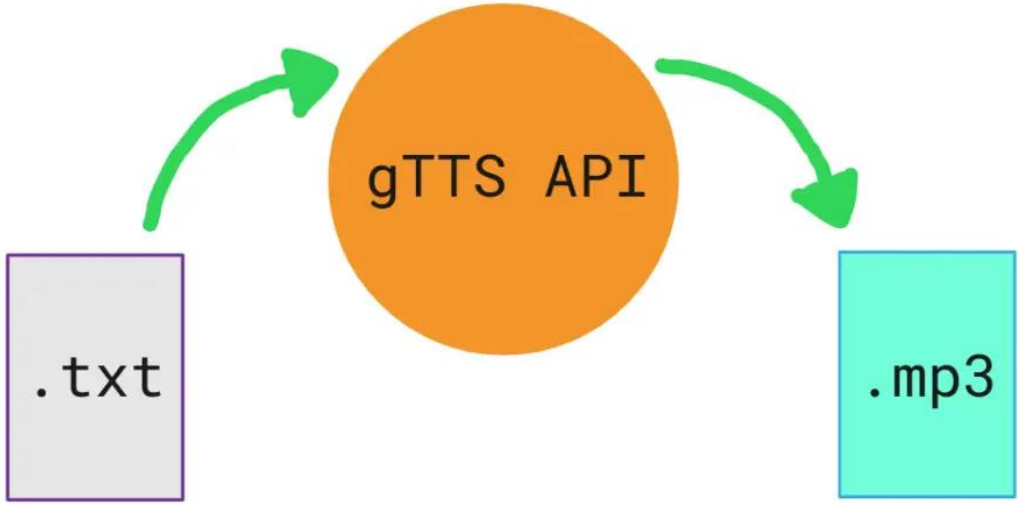
# Before Earthquake

- **Therefore I think Telepresence Robots for each Street.People who live in that Street can reach many information from the robot.Robots can do face recognition.When one of the person go to the robot then robot recognize the person.It introduce name and last name of the person,the buildings person lives in,age of the building,date of last time inspection,how many floors is it,how many apartment is it,total number of people live in and risk analyze.**

- **It can be used OpenCV(Open Source Computer Vision Library),numpy(for working with arrays) and pickle(for serializing and de-serializing a Python object structure) library for face recognition.**


- **In my Project,I aim to make a telepresence robot that is in  social interaction with people and the provide highest benefit to people.Therefore Robots can also perform speech recognition for disabled and illiterate.When the person talk,system recognize the person and it out loud all information what he/she ask.**

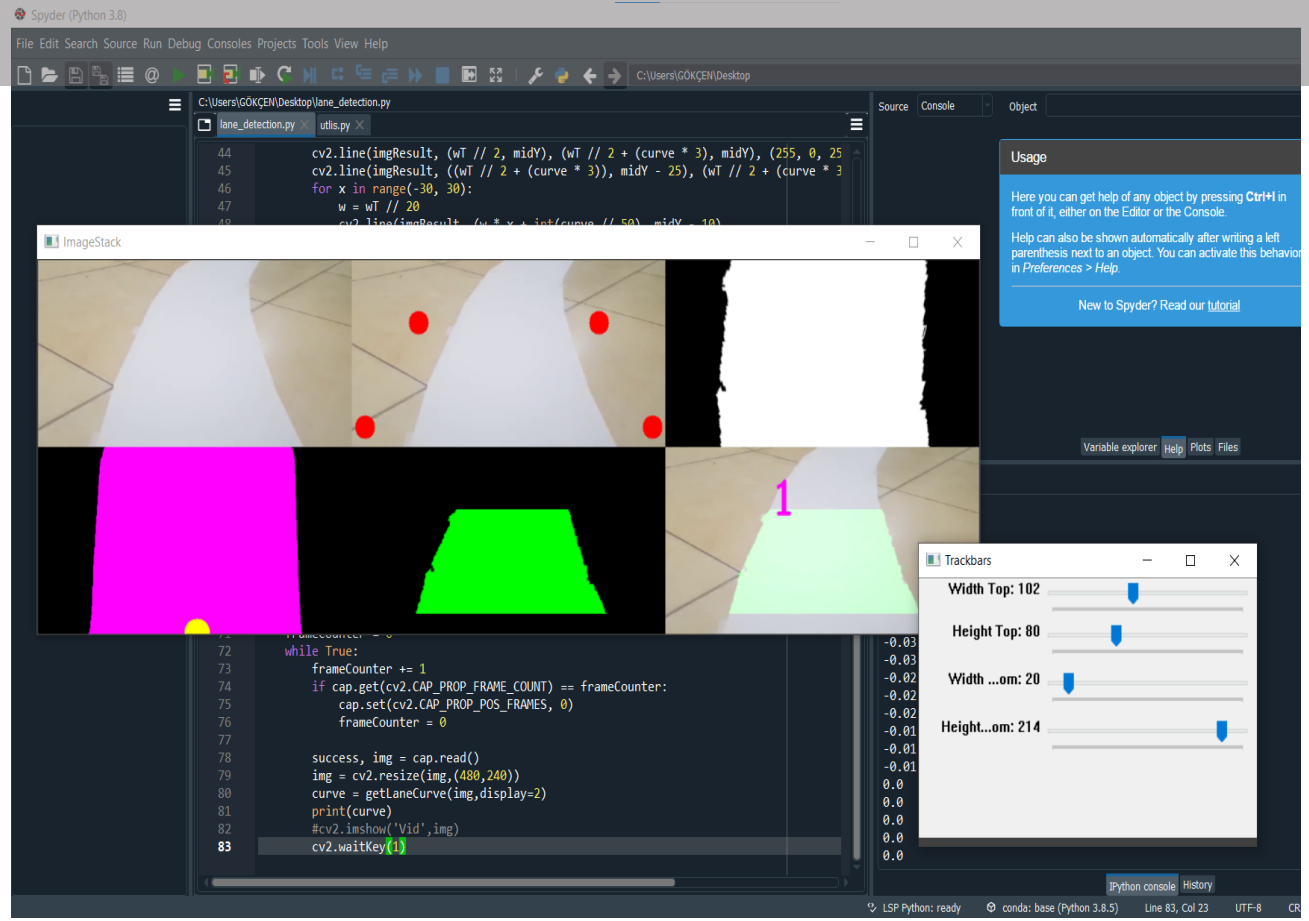
- **It can be used speech_recognition,webbrowser(provides a high-level interface to allow displaying web-based documents to users),playsound,os(Miscellaneous operating system interfaces),gTTS(interface with Google Translate's text-to-speech API) for speech recognition.**



# After Earthquake

- **After the earthquake,probably people will in chaos.They will not know where to wait and sleep,where to find foods or water.They will not know the closed roads.**
- **Therefore the robot shows people where to go and wait,where to find foods and water.**
- **It shows open roads.**
- **It shows responsible numbers for help.**

- **If the robot can move,I have to add lane detection-path following.For the real time path following,it can be used image processing,Neural Network(getting current path,saving images in the folder).**



Face Recognition and Speech Recognition

Building Information

- Age of Building
- Floors
- Apartments
- Last inspection date
- Risk analyze
- Number of people living

Authorized Request for Inspection

Help

- Nearest Assembly Area
- Foods and Water
- Emergency Numbers

Road Conditions

- Open Roads
- Closed Roads

# Conclusion

**Telepresence robots are getting more and more popular to be applied in different fields including home assisting, distance education, healthcare institution, and the retail industry.However I could not find any information about ‘earthquake’ field.Telepresence robot with AI  has not been used in earthquake studies.For this Project ,I have adapted telepresence robots with AI for eartquake.**

**In my opinion,telepresence robots can be very useful in this field by helping people before and after earthquake.**