

# AI-Powered Accident Cause Identification

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# Problem statement

- This project aims to analyze accident reports to extract primary cause, secondary cause and risk factors.

# Objective

- Develop an NLP(natural language processing) based system to identify accident cause from accident report.
- Implement a chatbot to extract accident cause from accident report and display it.

# Video: Testing API using Postman

Home Workspaces API Network Search Postman Invite Upgrade

My Workspace New Import Overview POST http://127.0.0.1:5000 POST http://127.0.0.1:5000 POST http://127.0.0.1:5000 REST API basics: CRL POST Untitled Request No environment

Collections

- API testing basics
- Contract Testing
- Integration Testing
- Intro to Writing Tests
- Mock Data Generation
- Performance Testing
- Regression Testing
- REST API basics: CRUD, test & variable
- REST API basics: CRUD, test & variable
  - GET Get data
  - POST Post data
  - PUT Update data
  - DEL Delete data

Environments

Flows

APIs

History

Untitled Request


POST Enter URL or paste text Send

Params Authorization Headers (6) Body Scripts Settings Cookies

Query Params

	Key	Value	Description	Bulk Edit
	Key	Value	Description	

Response History



Enter the URL and click Send to get a response

# Image of output-Postman

HTTP **http://127.0.0.1:5000/predict** Save Share </>

**POST** ▼ **http://127.0.0.1:5000/predict** Send ▼ ?

Params Authorization Headers (8) **Body** • Scripts Settings Cookies

☐ none ☐ form-data ☐ x-www-form-urlencoded ☒ raw ☐ binary ☐ GraphQL **JSON** ▼ Beautify

```
1 { "text": "On 08 Dec 2024, at 04:14 AM, a bicycle collided with a two-wheeler at NH85 near Idukki. The rider suffered a leg fracture and succumbed. The cause of the accident was determined to be drunk driving." }
```

Body Cookies Headers (5) Test Results 🔄 200 OK 93 ms 278 B 🌐 ⋮

{ } **JSON** ▶ Preview 🔗 Visualize ▼ 🔗

<b>Primary Cause</b>	Drunk driving
<b>Risk Factor</b>	High
<b>Secondary Cause</b>	Drunk Driving Violation

Postbot Runner Start Proxy Cookies Vault Trash ?

# Accident cause identification chatbot (Using Gradio)

Accident Cause Identifying Chatbot

report

"On 05 Dec 2023, at 02:46 AM, a car collided with a two-wheeler at NH183 near Trivandrum. The rider, wearing a seatbelt, suffered an arm fracture and is recovering. The cause of the accident was determined to be road conditions."

Clear

output

\*\*Primary Cause:\*\* Road conditions

\*\*Secondary Cause:\*\* No Violation

\*\*Risk Factor:\*\* High

Submit

Flag

# Video of chatbot: Gradio

← → ↻ 127.0.0.1:7861 ☆ 📁 ⬇️ ⓘ ⋮

🗖️ (3) AI Animation Ge... DuckDuckGo — Priv... 📁 Learn Game Develo... 📁 Learn 📁 Tools 📁 EarnWebsites 📁 DSA\_Offline\_Schedu... 📁 Documentation 📄 2201.09873v1.pdf 📄 CheXpert Dataset |...

» 📁 All Bookmarks

## Accident Cause Prediction Chatbot

report

On 09 Dec 2023, at 04:42 AM, a Jeep collided with a pedestrian at NH85 near Kollam. The rider, wearing a seatbelt, suffered a multiple injuries and was declared dead on the spot. The cause of the accident was determined to be wrong side driving.

✓

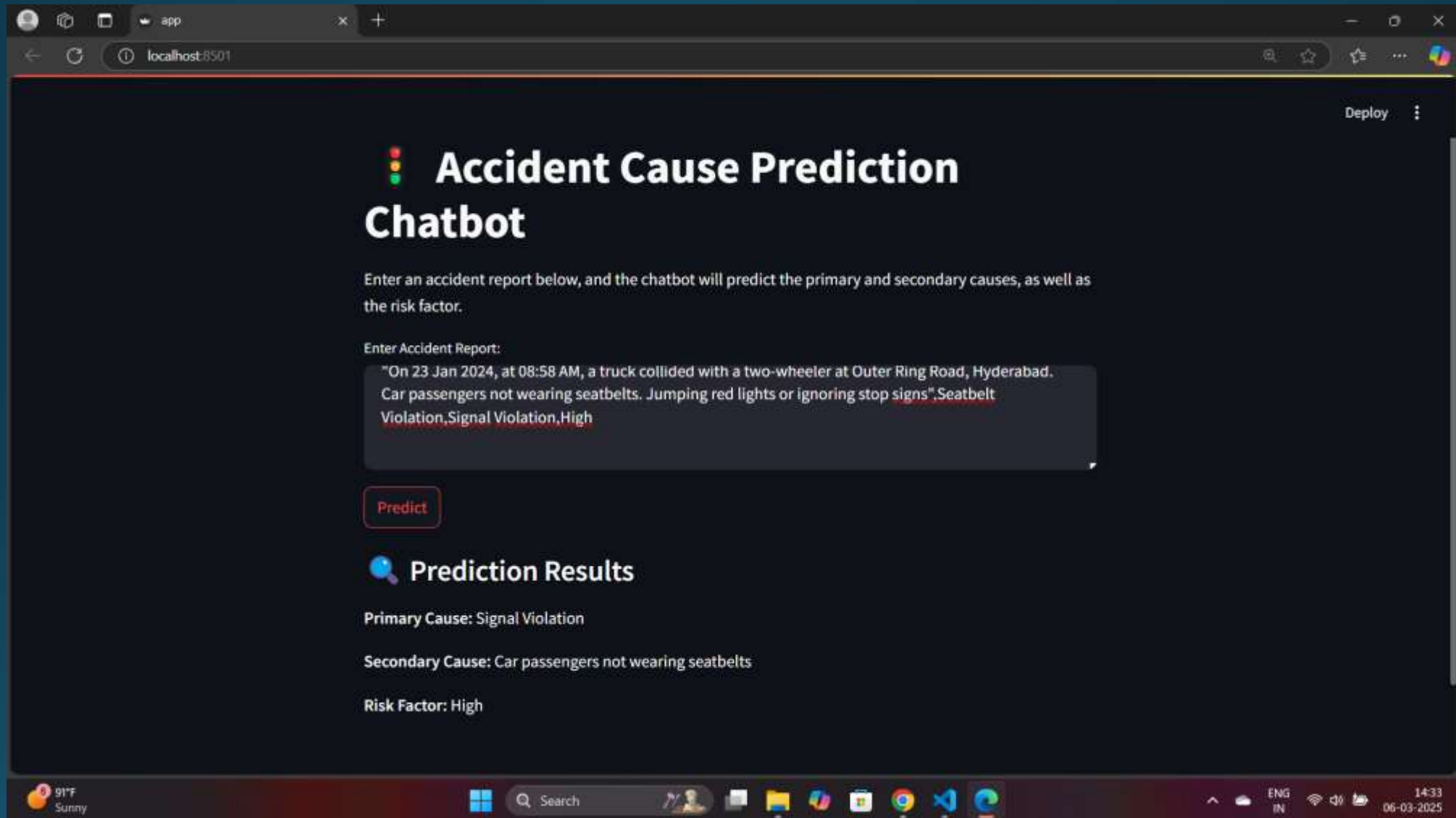
Clear Submit

output

Flag

Use via API 🦜🔗 • Built with Gradio 🍷 • Settings ⚙️

# Chatbot(Using streamlit)





# References

- Form 54( Accident information report, Ministry of Road Transport and Highways)
- Ministry of road transport and highways
- iRAD (Integrated Road Accident Database)
- Annual reports, Gol, Ministry of Road Transport and Highways
- All India weather summary and forecast bulletin, India meteorological department
- Postman documentation
- Gradio documentation