



Smart Zambia

# Giga hackathon

GovLink AI - For Connectivity Hackathon II: Enhancing Connectivity, Security and Performance with AI-driven insights.

# **What is GovLink AI**

**GovLink AI is an AI-driven platform that enhances government network reliability, ensuring seamless connectivity, security, and real-time monitoring.**



## Why GovLink AI

- ◆ **Enhanced Security & Threat Detection:** AI-driven risk mitigation.
- ◆ **Reduced Downtime & Faster Response:** Proactive issue resolution.
- ◆ **Cost Savings Through Efficient Bandwidth Use:** Smart allocation.
- ◆ **Data-Driven Decision Making:** Actionable insights for

# GovLink AI Mission

GovLink AI's mission is to leverage AI-driven anomaly detection, predictive analytics, and automated network rerouting to prevent outages and optimize bandwidth distribution. By analyzing real-time network traffic, the system can detect latency issues, anticipate infrastructure failures, and suggest intelligent failover mechanisms.



# GovLink AI Key Features

1

Network Health  
Monitoring

Continuous tracking of network metrics such as latency, packet loss, and congestion.

2

AI-Powered Alerts &  
Anomaly Detection

Detects suspicious activities.

3

Smart Routing for  
Optimized Traffic

Improves efficiency.

4

Bandwidth Analytics &  
Reporting

Visualizes network usage.

5

## Offline Mode & Data Resilience

Ensures operations in downtime

6

## Offline Mode & Disaster Recovery

Enables caching of critical government services in areas with intermittent internet access.



# GovLink AI Dashboard

## Real-time Network Status

GovLink Ai - Chromium

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localhost:3000/dashboard

Community

GovLink AI Dashboard

Ask AI About Your Network

How can i optimise my Network

Network Actions

Select Action

Select an action

AI-Powered Alerts & Insights

High packet loss detected on DotGov APIs 2 mins ago

Possible ISP failure in Rural Office A 10 mins ago

Unusual bandwidth spike detected 30 mins ago

Network Device Configuration

Bandwidth & Performance Analytics



# Bandwidth Analytics & Reporting

GovLink Ai - Chromium

GovLink AI Dashboard

Network Device Configuration

Device Type  
Select Device Type

Device Model  
Select Model

Configuration Task  
e.g., Configure VLAN, Setup routing protocol

Get Configuration Steps

Bandwidth & Performance Analytics

Real-time Bandwidth Usage 10:22:38  
**3716.97 Mbps**

Network Speed Test Run Test

Network Diagnostics  
Error Code or Message  
e.g., ERR\_CONNECTION\_TIMED\_OUT, 404, or describe the error...

Diagnose Error

Download Speed

# Smart Routing for E-Government Services

GovLink AI - Chromium

GovLink AI Dashboard

Network Device Configuration

Device Type

Switch

Device Model

Cisco Catalyst 2960

Configuration Task

Help me configure VLANs for this device

Get Configuration Steps

Bandwidth & Performance Analytics

Real-time Bandwidth Usage

10:24:26

3721.88 Mbps

Network Speed Test

Testing...

Network Diagnostics

Error Code or Message

e.g., ERR\_CONNECTION\_TIMED\_OUT, 404, or describe the error...

Diagnose Error

Download Speed



# Technology Stack

## Front-end

Next.js + TypeScript  
(real-time dashboard  
visualization)

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## Back-end

Django + FastAPI  
(network analytics, API  
management)

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## AI Models

TensorFlow / PyTorch  
(predictive analytics,  
anomaly detection)

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## Networking

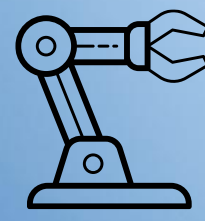
Scapy + Wireshark  
APIs (traffic analysis)

## Database

PostgreSQL + Redis (data  
caching, performance  
optimization)

## Cloud Deployment

AWS/GCP/Azure (for  
scalability)



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**Thank You!**