



Cowbot - An AI Linux Assistant

Yash Lakhtariya, Dhruvi Suthar, Prarthi Joshi

21162101012, 21162101005, 21162101009

Batch- 41, CBA

Class- 4A, SEM- 4

Introduction

Dhenu is AI Cowbot Assistant for all major Linux kernel based distributions (x64). Being capable of doing many things on demand, she can guide & assist you on your machine.

Purpose

Generally, everyone wants an assistant to make their work easy. So applies to the operating systems. Android has Google, Amazon has Alexa, Apple has Siri, Windows has Cortana, but what about Linux?

Our purpose is to provide linux users, an AI based assistant which can guide and assist them whether they are beginner or advanced users, desktop or server users.

Scope

- There are 32.8 Million worldwide linux desktop users, about 2.09% of market share near to 2.18% of Chrome OS for desktops/laptops.
- 13.6% of the server market for Linux, leading the market after Windows.

General - Description

Problem Statement

There are many Mac and Windows users switching to Linux nowadays, as they are beginners it can be challenging for them to get used to it. Because for Linux beginners, a lot of commands are difficult to remember and use. And existing users also want something simpler, say Cowbot to learn also and efficiently use their Linux systems with on demand AI help as their personal assistant.

Existing System

There is a virtual assistant J.A.R.V.I.S presently, but it has its own limitations :

1. Limited Functionalities.
2. Not user-friendly.
3. Doesn't offer customization.

Proposed System

We have proposed a system with TUI (Terminal User Interface) which can be used as a CLI (Command Line Interface) and GUI also (Graphic User Interface) with 100% support, which makes it easier for the users working on desktop as well as servers.

Product Functions

Our Cowbot is proposed with the following functionalities (and much more):

1. Google search from terminal.

Input : keyword/s to search

2. Intelligent AI based suggestions.

3. Wireless Connectivity with other Linux systems connected to the same network(LAN, WAN, MAN, an internet or the Internet).

Input : username and IP address

4. User Customization for different functionalities (*premium)

5. Voice Output Feature (*premium)

6. Video search on your terminal

Input : keyword/s to search

7. Manage efficiently history of commands via DBMS

Input : search or delete history and optionally date/keyword/time/interval

8. Get time, date, month, year

Input : keyword like time/date/month/year

9. Open, install or uninstall softwares

Input : application name

10. Run linux commands

Input : commands

11. Create/rename/delete files and folders

Input : file/folder name and path

12. Open files and folders

Input : file/folder name and path

13. Move/copy files

Input : file/folder name and path

14. Search files on your system

Input : keyword to search

15. Show network properties

Input : statement like show network properties

16. Show system properties

Input : statement like show system properties

17. Open default apps like browser,file manager,etc.

Input : open [application type]

18. Repeat what you say**19. Reply basic questions like : asking her name, her work, her capability, greet her, etc.****20. Manage processes running on your system**

Input : keywords like manage, process

21. Tell you quotes which are funny or motivational

Input : statement containing boring/bored

22. Reply you in a different way when she doesn't understand your input

Input : anything useless

23. Run a train on your terminal

Input : statement containing boring/bored

User's characteristics

User Characteristic

Every user including Programmers, Gamers, Learners, Professionals, Commercial users, Server admins, Students, etc.

User Education Level Required

No educational background needed, only basic english knowledge

Constraints

System Constraints

- Minor linux distributions have their own package management systems which we presently cannot integrate to install dependencies and our application. So very few distributions exist like that, they aren't supported presently.

Dependencies for the software

1. Python 3.9 or newer
2. MariaDB version 10 or newer or MySQL version 6 or newer must be installed and set up in the system.

Requirement Specification

Functional Requirements

1. Stable System: System Stability is a must. Stable systems handle synchronizations, Crashes etc. without affecting work related activities.
2. User Familiarity: System is easy to understand and work with regardless of experience with computers.
3. Response Time : As Linux itself is very fast the assistant should also be as fast as the system.
4. Security : Security is provided due to our application being in binary, harder to decompile the source.

Minimum Hardware Requirements for our Product

1. RAM : 2GB
2. Processor : Core 2 Duo or newer
3. NVIDIA GPU Turing or newer (for optional GPU features)

Software Requirements for our Product

OS : Linux kernel based distributions (x64)

Kernel : Officially distributed kernels (Not tested on custom kernels)

Environment : Python 3.9 or newer

Non-Functional Requirements

1. **Security:** Our system provides data security. All the history commands are stored in a database which is secured by password and can only be accessed by the developers.
2. **Availability:** Our application is available on Github and premium version via Telegram support system.
3. **Maintenance:** Proper maintenance and regular error checking will be conducted to ensure smooth operation.
4. **Support:** All major linux distro support is provided via Github or Mail. Personal support is provided for premium users.