

# AI Voice Assistant Development Roadmap

## Pre-Phase: Setup & Environment Preparation

Features:

- Install Python, VS Code
- Setup microphone
- Learn basics of speech recognition, TTS, pyautogui
- Understand automation libraries

What You Will Learn:

- Python basics
- Text-to-Speech and Speech Recognition
- PyAutoGUI and OS automation
- Modular thinking

## Phase 1: Core Voice Assistant - Basic Functionalities

Features:

- Wake word detection
- Recognize basic commands
- Tell time/date
- Open apps like Notepad, Chrome
- Perform system tasks like shutdown/restart

What You Will Learn:

- Voice recognition
- Text-to-Speech
- Threading
- Command parsing
- Modular code design

## Phase 2: Intermediate Automation & Customization

Features:

- Search Google/Wikipedia/YouTube

## AI Voice Assistant Development Roadmap

- Fetch weather info
- Manage to-do lists
- Take/read notes
- Control media
- Set reminders

What You Will Learn:

- API usage
- File handling
- Data storage (JSON)
- Web scraping

### Phase 3: Web Intelligence & Smart Filtering

Features:

- Filtered news
- Smart web search
- StackOverflow/GitHub search
- Email handling
- Multilingual support

What You Will Learn:

- NLP
- API requests
- Summarization
- Secure auth (OAuth)

### Phase 4: IoT Device Control

Features:

- Control smart bulbs/fans
- Motion-based actions
- IoT dashboard

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What You Will Learn:

- MQTT
- Raspberry Pi & Arduino
- FastAPI/Flask backend

## Phase 5: Assistant Anywhere - Cross-Device Access

Features:

- Cloud command processing
- Android app version
- Cross-device syncing
- Remote desktop assistant control

What You Will Learn:

- REST APIs
- Android voice input
- Firebase sync
- Authentication & security

## Phase 6: Alexa-Level Intelligence

Features:

- Assistant memory
- Context-aware responses
- Plugins like Spotify
- Routine triggers
- Self-updating assistant

What You Will Learn:

- ChatGPT/LLMs
- Databases
- Plugin architecture

## **AI Voice Assistant Development Roadmap**

- Persistent state handling