Jarvis AI Agent Workflow

IEEE-Style Project Documentation and Case Study

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Figure 1. Project visual identity used in the portfolio website.

Abstract

Jarvis AI Agent Workflow is documented as a professional portfolio case study by Muhammad Haider Abbas. The project demonstrates practical capability in AI / Automation through a structured problem-solution design, implementation direction, testing plan and future development roadmap. The report explains the business or academic motivation, system requirements, architecture, workflow, quality considerations and expected professional value of the project. It is prepared for use as downloadable portfolio evidence for recruiters, clients and academic reviewers.

Keywords: AI / Automation, Concept / Prototype, Automation Designer, AI Agents, n8n, Ollama, Automation

I. Project Profile

Field	Details
Project Title	Jarvis AI Agent Workflow
Category	AI / Automation
Year	2026
Role	Automation Designer
Status	Concept / Prototype
Tools	n8n, Ollama, Prompting, APIs
Portfolio Slug	jarvis-ai-agent-workflow

II. Introduction and Problem Context

This document presents the technical and professional documentation for Jarvis AI Agent Workflow. The project is positioned as a concept / prototype in the AI / Automation category. The work highlights the author's ability to combine technical implementation, documentation discipline and outcome-focused project thinking. The project summary is: A modular AI assistant workflow concept using n8n-style automation, local models and API actions.

A. Problem Statement

Many daily workflows are repetitive but require context, decision-making and structured tool use.

B. Proposed Solution

The concept uses agents, prompts, local models and API-style actions to automate productivity tasks.

III. Aim and Objectives

To design a modular AI assistant workflow that combines prompts, automation nodes, local model direction and API actions for productivity tasks.

- Define command intake and intent routing.
- Design n8n-style workflow modules for repeatable actions.
- Explore local AI model execution through Ollama direction.
- Connect possible tools such as email, calendar, files and research.
- Document privacy and human-in-the-loop controls.

IV. Requirements Analysis

ID	Requirement	Type	Priority
FR-01	Command input	Functional / project requirement	Required
FR-02	Agent router	Functional / project requirement	Required
FR-03	Tool/action modules	Functional / project requirement	Required
FR-04	Local model option	Functional / project requirement	Required
FR-05	API/webhook direction	Functional / project requirement	Required
FR-06	Memory or project notes	Functional / project requirement	Required
FR-07	Notification output	Functional / project requirement	Required
NFR-01	Usability and clear portfolio presentation	Non-functional	Required
NFR-02	Maintainability and future extensibility	Non-functional	Required
NFR-03	Professional documentation and evidence quality	Non-functional	Required

V. System Architecture

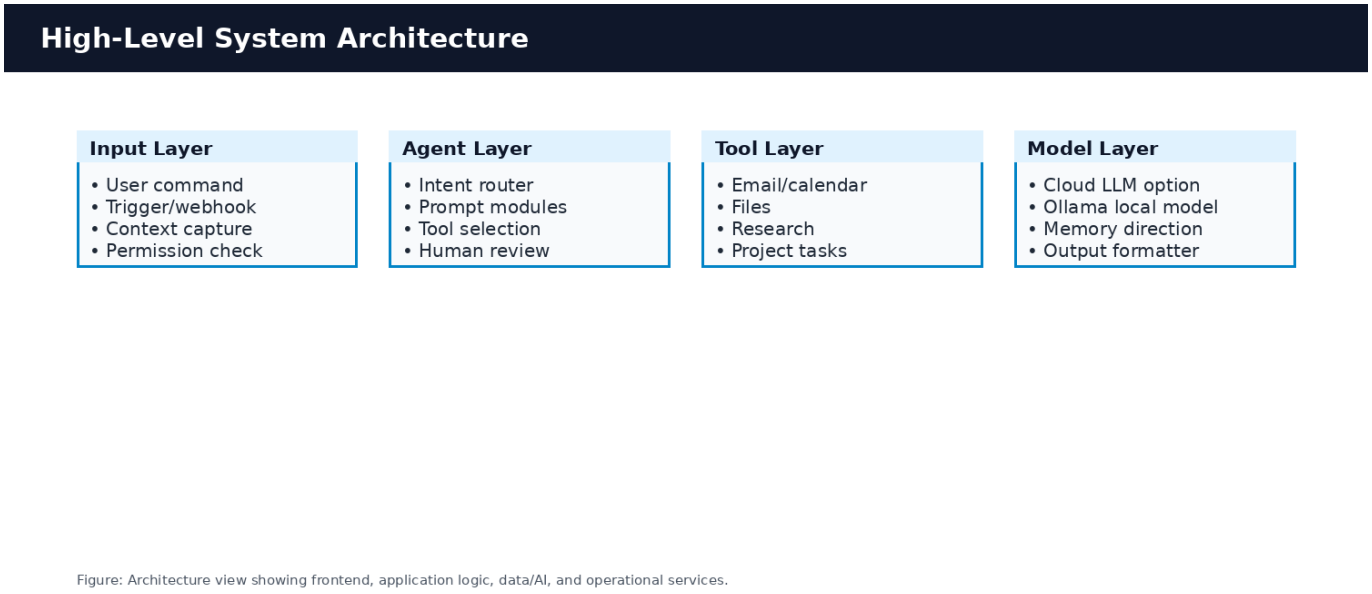


Figure 2. High-level architecture or production pipeline for the project.

The architecture separates user-facing presentation, project logic, data or model processing, and operational output. This structure makes the project easier to explain, test and extend inside a professional portfolio environment.

VI. Workflow Design

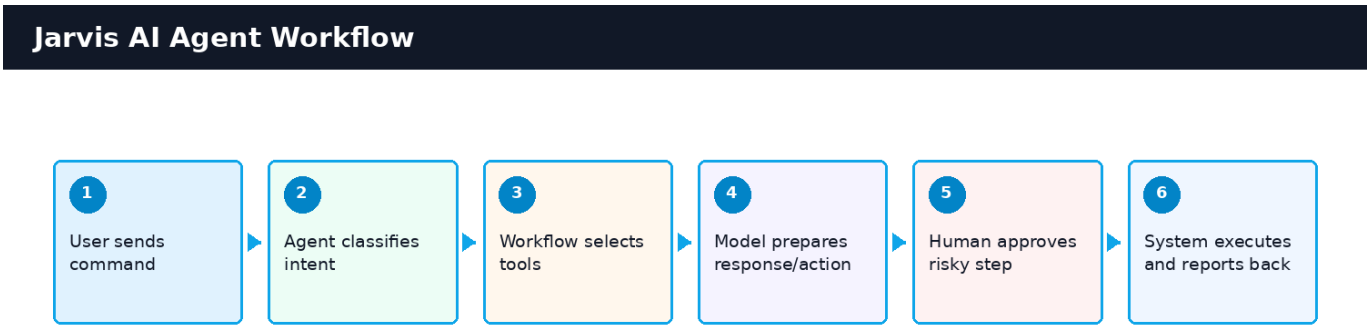


Figure: Generated project workflow / architecture artefact for portfolio documentation.

Figure 3. Project workflow from input or user action to final output.

VII. Data, Components and Implementation View

Component	Layer	Responsibilities	Notes
C-01	Input Layer	User command, Trigger/webhook, Context capture, Permission check	Core component group
C-02	Agent Layer	Intent router, Prompt modules, Tool selection, Human review	Core component group
C-03	Tool Layer	Email/calendar, Files, Research, Project tasks	Core component group
C-04	Model Layer	Cloud LLM option, Ollama local model, Memory direction, Output formatter	Core component group

Implementation should be documented through screenshots, code snippets, database schema extracts, test outputs or demonstration media when available. For deployed or live systems, screenshots and logs should be attached as appendices to increase evidence strength.

VIII. Testing and Validation Strategy

Test Area	Test Method	Expected Result
Intent routing	Submit sample commands	Correct workflow selected
Prompt module	Run structured prompt	Output format consistent
Tool action	Trigger mock API	Action result stored
Safety check	High-risk action requested	Human approval required

The testing strategy focuses on validating the main user or system journey, confirming that core requirements behave as expected, and recording limitations clearly. This supports honest portfolio evidence and avoids overclaiming features that are still prototypes.

IX. Security, Ethics and Professional Considerations

- Avoid presenting AI recommendations as guaranteed truth.
- Protect user data and avoid uploading sensitive CV, health or behavioural data without consent.
- Use evaluation metrics and explain limitations clearly.

X. Results, Outcome and Future Work

A. Outcome

A strong AI automation concept for future development.

B. Future Enhancements

Build working agent modules for email, calendar, files, research and project management.

Roadmap Stage	Enhancement Direction
Short term	Add missing screenshots, demo links and downloadable supporting files.
Medium term	Connect live/source URLs and replace placeholder evidence with real artefacts.
Long term	Use analytics, user feedback or formal evaluation results to strengthen the project case study.

XI. References

[1] n8n, "AI workflow automation," https://n8n.io/

[2] Ollama, "Run large language models locally," https://ollama.com/

Appendix A. Portfolio Download Mapping

Item	Value
Recommended PDF path	docs/jarvis-ai-agent-workflow-project-documentation.pdf
Recommended Word path	docs/jarvis-ai-agent-workflow-project-documentation.docx
Admin field: Documentation	docs/jarvis-ai-agent-workflow-project-documentation.pdf
Admin field: Extra Project File	docs/jarvis-ai-agent-workflow-project-documentation.docx