

Building AI Agents: The N8N Way

Hands-on Workshop by Anuroop Mrutyunjay

Today's Agenda

Introduction (15 min)

What are AI agents and why use N8N?

Hands-On Demo (50 min)

Build a personalised AI study plan agent together

Applications (15 min)

Teaching & research uses

Q&A (10 min)

Questions and next steps

What is an AI Agent?

An AI system that can think AND take actions

Think of it as a research assistant that can:

- Search for recent research papers in your field
- Answer questions from your course materials
- Organize and analyze lab data
- Help students 24/7 with course-specific questions

Unlike simple chatbots that just respond, agents can use tools and make decisions

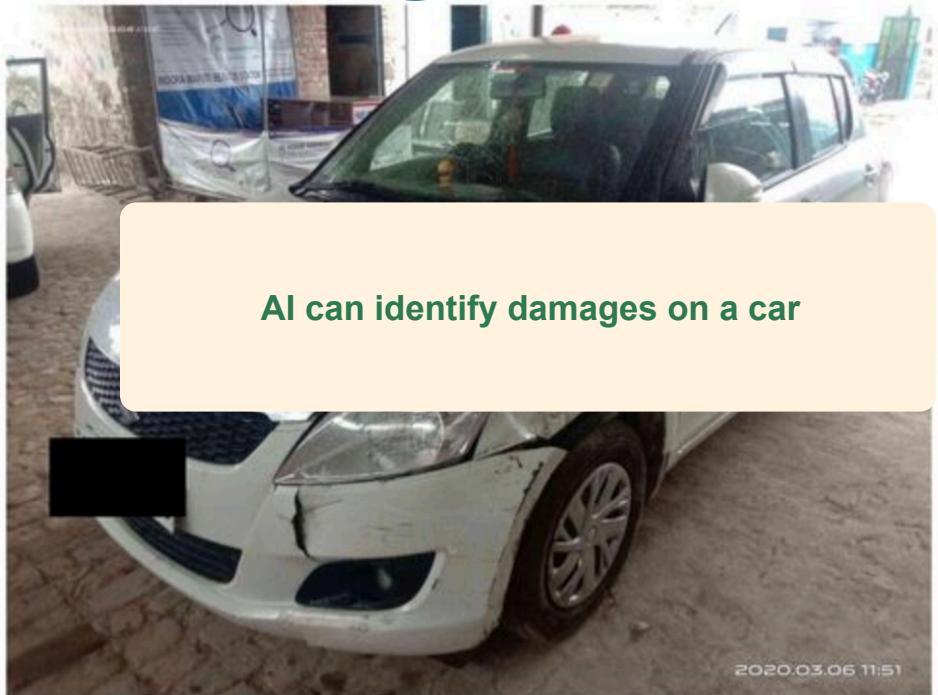
AI vs Agent

AI can generate code

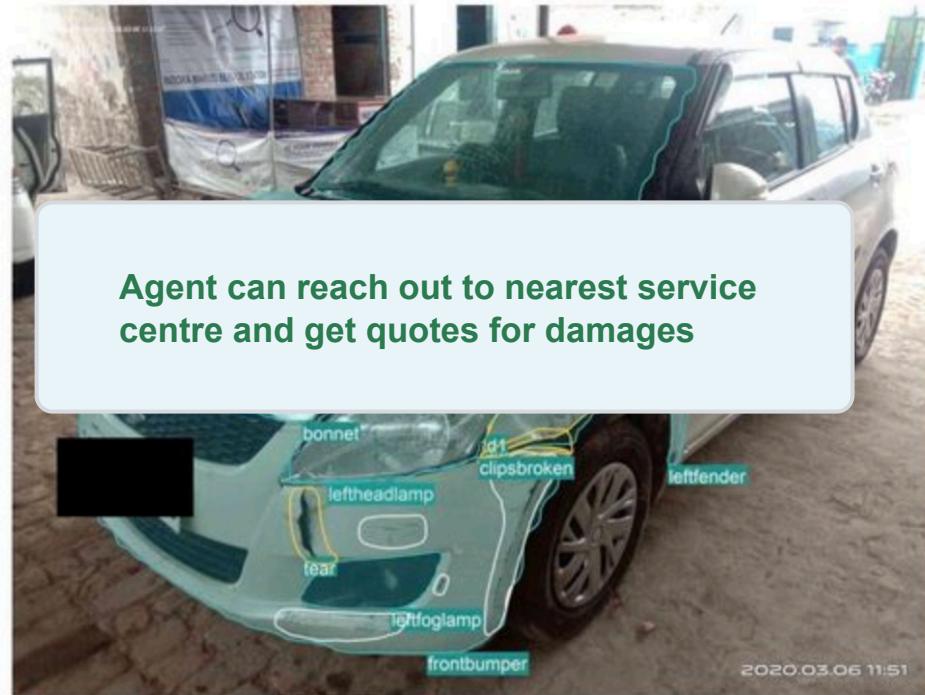
Agent can generate code, decide file to update and create a GitHub PR for you

Uploaded images

AI vs Agent



Analysed images



AI vs Agent - getshrimpiq.com

A conveyor belt with shrimp being processed. The AI side shows green bounding boxes and confidence scores for each shrimp. The Agent side shows a white form being filled out with shrimp count data.

AI can count shrimp on a conveyor

Agent can create customs forms and
fill them out based on shrimp count

What is N8N?

Visual Workflow Builder

Drag-and-drop interface — no coding required

400+ Integrations

Connect to Google Drive, Slack, databases, and more

Self-Hostable

Keep your data private and control costs

What's the advantage?

Build powerful AI tools without learning to program

If you can use email, you can build AI agents with N8N

Part 2

Hands-On Demo: Build Together

Our Project: AI Study Plan Agent

What we'll build:

An AI agent that creates a customised study plan for individuals based on their interests

The agent will:

- Parse user forms and understand student interests
- Search for relevant courses
- Summarize key findings
- Create a 12-week study plan and email it to the student

Time: 50 minutes including testing and Q&A

Step 1: Setup (10 min)

Live Demonstration

- Open N8N interface
- Create new workflow
- Add Form Trigger node

Follow along on screen

We'll walk through each click together

The form trigger is how users will interact with your agent

What you'll see:

- N8N canvas
- Node library
- Workflow connections

Step 2: Add AI Brain (15 min)

1. Add AI Agent Node

The "brain" of your system

2. Connect to AI

Choose OpenAI or Claude

3. Write System Prompt

"You help students find AI courses and create a study plan for their subject area."

The prompt tells the AI what role to play

Step 3: Give It Tools (15 min)

This is where the magic happens — the AI can now take actions!

Tool 1: HTML

Draft a beautiful email with study plan

Tool 2: Gmail

Send out an study plan email to user

How the Agent Decides:

When performing a task, the AI automatically chooses which tool to use based on the action performed

We'll connect both tools to the AI Agent node and watch it work

Step 4: Test It Live (10 min)

Example Interests:

- “NLP + Deep Learning”
- “ML Ops + ML Fundamentals”

Watch it work:

Search courses → Create email body → Send Email

Debug together

See logs and how it thinks

This is where you'll see AI agents in action for the first time!

Part 3

How This Helps Your Work

For Teaching

24/7 Teaching Assistant

Students get instant help with course-specific questions, even at midnight

Concept Explainers

Create agents that explain complex topics using your course materials

Lab Data Organization

Auto-organize and analyze student lab reports and experimental data

Assignment Feedback

Initial review of student submissions before your detailed grading

All powered by your own course content and materials

For Research

Literature Review Automation

Automatically find and summarize recent papers in your research area

Grant Writing Helper

Research background information and compile relevant citations

Data Pipeline Assistant

Process and analyze experimental data with AI-powered workflows

Collaboration Bridge

Share research summaries automatically with your team via Slack or email

Save hours per week on repetitive research tasks

Important Limitations

AI Agents Cannot Replace:

- Your subject expertise
- Critical thinking
- Complex grading
- Personal mentorship

Student Misuse

Set clear guidelines on AI tool usage

Data Privacy

Be mindful of data shared with AI

AI agents are assistants, not replacements

Getting Started on Your Own

1. Sign Up

Free N8N cloud account at n8n.io

2. Get API Key

OpenAI or Anthropic (Claude)

3. Start Simple

Begin with basic form, add one tool at a time

Resources:

- N8N documentation and tutorials
- Template library with workflows
- Community forum

Questions?

Thank You!

Ready to build your first AI agent?

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