



# Automation Arena — Workflow Documentation



## Project Title:

AI-Powered LinkedIn Content Automation Using n8n

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## 🎯 Goal

The goal of this project is to automate the process of **creating and posting AI-generated LinkedIn content** using **n8n**, a no-code workflow automation tool.

This workflow eliminates repetitive manual work by:

- Detecting new or updated entries in Google Sheets
- Generating professional LinkedIn post content using OpenAI
- Formatting and publishing the content automatically to LinkedIn
- Ensuring content is unique and formatted properly

## ⚙️ Tool Used

### n8n

An open-source workflow automation tool that connects apps and APIs (similar to Zapier, but free and more flexible).

In this project, n8n connects:

- **Google Sheets** → triggers workflow
- **OpenAI Chat Model** → generates content
- **LinkedIn API** → posts automatically
- **JavaScript Node** → cleans and formats data

## 🌐 Workflow Overview

**Workflow Name:** Google Sheets → OpenAI → LinkedIn Automation

**Total Nodes Used:** 8

1. Google Sheets Trigger
  2. IF Node
  3. Limit Node
  4. OpenAI Chat Model
  5. AI Agent
  6. Structured Output Parser
  7. Code in JavaScript
  8. HTTP Request (LinkedIn Post)
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## Step-by-Step Explanation



### Step 1 — Google Sheets Trigger

**Purpose:** Starts the automation when any row is added or updated in Google Sheets.

- **Trigger Type:** `anyUpdate`
- **Sheet Used:** Contains columns such as `Topic`, `Status`, and `Post Content`.
- When a new row is added or updated (e.g., a new topic is added), it triggers the next steps automatically.



### Step 2 — IF Node

**Purpose:** Filters which rows should continue through automation.

- Example: Continue only if `Status = "Pending"`
  - Prevents reposting or reprocessing of already posted content.
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## Step 3 — Limit Node

**Purpose:** Controls how many rows to process per run.

- Example: Limit to **1 post at a time** to avoid duplicates or spam on LinkedIn.
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## Step 4 — OpenAI Chat Model

**Purpose:** Generates creative LinkedIn post text using AI.

- **Model Used:** `gpt-4.1-mini`



## Step 5 — AI Agent Node

**Purpose:** Acts as a middle layer to coordinate structured AI output parsing and formatting.

- Takes input from the **OpenAI Chat Model** and ensures the data is properly structured.
  - Passes data to the **Structured Output Parser** node for clean extraction.
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## Step 6 — Structured Output Parser

**Purpose:** Extracts only the “post” text from the AI response.



## Step 7 — Code in JavaScript Node

**Purpose:** Escapes special characters like newline (`\n`) to make sure the text is LinkedIn API compatible.

**Result:**

Ensures that when the text is sent to LinkedIn, it doesn’t break due to unescaped line breaks or quotes.



## Step 8 — HTTP Request (LinkedIn Post)

**Purpose:** Publishes the AI-generated post automatically to LinkedIn via the API.

## Workflow Summary

Step	Node Name	Function
1	Google Sheets Trigger	Detects updates or new rows
2	IF	Filters posts based on conditions
3	Limit	Restricts how many posts run
4	OpenAI Chat Model	Generates post text using AI
5	AI Agent	Manages AI and output structure
6	Structured Output Parser	Extracts valid post text
7	Code in JavaScript	Escapes special characters
8	HTTP Request	Publishes post to LinkedIn



## Problem Solved

Manually writing and posting to LinkedIn daily can be repetitive and time-consuming.

This workflow:

- Automatically generates high-quality AI content
- Posts consistently without human intervention
- Logs activity and minimizes duplication

Result: **Save hours every week** while keeping your LinkedIn active and engaging.



## Result

This project demonstrates **end-to-end AI automation** using n8n — integrating Google Sheets, OpenAI, and LinkedIn seamlessly.

It's a practical example of how AI and automation can streamline digital tasks, improve consistency, and enhance productivity.