

AI LinkedIn Post Generator - Workflow Documentation



Project Overview

Project Name: AI LinkedIn Post Generator with n8n Automation

Created By: Sai prasad . S

Date: October 17, 2025

Platform: n8n (Automation Tool)



Project Objective

This project demonstrates an automated workflow that uses Artificial Intelligence to generate professional LinkedIn posts and automatically logs them to Google Sheets for tracking and record-keeping.

Purpose:

- Automate content creation using AI
 - Demonstrate integration between multiple platforms (OpenAI, Google Sheets, n8n)
 - Create a scalable content logging system
 - Showcase practical AI automation skills
-



Tools & Technologies Used

1. n8n (Workflow Automation Platform)

- **Purpose:** Orchestrates the entire automation workflow
- **Version:** Cloud-hosted n8n instance
- **URL:** <https://saiprasad18.app.n8n.cloud>

2. OpenAI API (Artificial Intelligence)

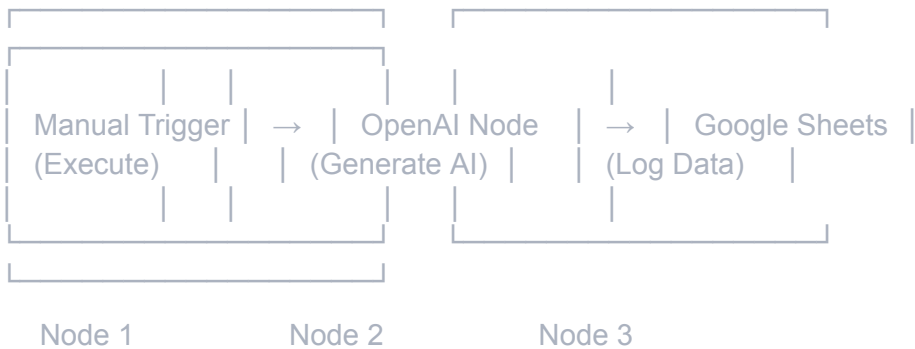
- **Purpose:** Generates unique, professional LinkedIn posts
- **Model Used:** GPT-3.5-turbo
- **API Integration:** Connected via n8n OpenAI node with API credentials

3. Google Sheets (Data Storage)

- **Purpose:** Logs all generated content with timestamps
- **Spreadsheet Name:** AI CONTENT LOG N8N SAMPLE
- **API Integration:** Connected via Google OAuth authentication

Workflow Architecture

Workflow Structure:



Node Configuration Details

Node 1: Manual Trigger

- **Type:** When clicking "Execute workflow"
- **Function:** Initiates the workflow when user clicks the Execute button
- **Configuration:** Default settings (no additional parameters required)

Node 2: Message a Model (OpenAI)

- **Type:** OpenAI API Integration
- **Model:** gpt-3.5-turbo
- **Function:** Generates professional LinkedIn posts about AI and automation

Prompt Configuration:

Generate a professional LinkedIn post about AI and automation in the workplace.

Topic: How AI is transforming productivity and efficiency in modern businesses.

Requirements:

- Write in first person perspective
- Keep it between 150-200 words
- Include 2-3 relevant hashtags at the end
- Make it engaging and professional

- Focus on real-world benefits

Tone: Professional but conversational, inspiring and forward-thinking.

Parameters:

- Temperature: 0.7 (balanced creativity)
- Max Tokens: 300 (sufficient for post length)
- Response Format: JSON (structured output)

Node 3: Append or Update Row in Sheet

- **Type:** Google Sheets Integration
- **Operation:** Append or Update Row
- **Spreadsheet:** AI CONTENT LOG N8N SAMPLE
- **Sheet:** Sheet1

Data Mapping:

- **Timestamp:** `{{ $now.toISO() }}` - Current date and time in ISO format
- **Content:** `{{ $('Message a model').item.json.message.content }}` - AI-generated post text
- **Status:** `Success` - Static value indicating successful generation

Column Matching: Content (used to identify unique rows)

How It Works

Step-by-Step Process:

- 1. User Initiates Workflow**
 - User opens n8n workflow interface
 - Clicks "Execute Workflow" button
 - Manual trigger node activates
- 2. AI Content Generation**
 - OpenAI node receives trigger
 - Sends prompt to GPT-3.5-turbo model
 - AI generates unique LinkedIn post about automation/productivity
 - Returns structured JSON response with content
- 3. Data Logging**
 - Google Sheets node receives AI-generated content
 - Extracts post text from OpenAI response
 - Adds timestamp using current date/time
 - Appends new row to Google Sheet with:
 - Column A: ISO timestamp

- Column B: Full AI-generated post
- Column C: "Success" status

4. Completion

- All nodes show green checkmarks (successful execution)
- New row appears in Google Sheets
- Workflow ready for next execution



Sample Output

Google Sheets Log Format:

Timestamp	Content	Status
2025-10-17T13:09:08.241+05:30	{"post": "In today's fast-paced business landscape, AI automation is revolutionizing the way we work, driving unprecedented efficiency and innovation. By seamlessly integrating AI-driven tools into daily workflows, businesses are unlocking new levels of productivity..."}	Success
2025-10-17T13:15:22.456+05:30	{"post": "In today's rapidly evolving digital landscape, AI automation is no longer just a futuristic concept—it's a transformative force reshaping how we work and collaborate. From intelligent process automation to AI-powered decision-making tools..."}	Success

Sample AI-Generated Post:

In today's fast-paced business landscape, AI automation is revolutionizing the way we work, driving unprecedented efficiency and innovation. By seamlessly integrating AI-driven tools into daily workflows, businesses are unlocking new levels of productivity, accuracy, and strategic insight. Tasks that once consumed hours of manual effort can now be completed in moments, allowing professionals to focus on higher-value activities like creative problem-solving and strategic decision-making. From intelligent data analysis to automated customer interactions, AI empowers teams to operate smarter and faster, driving growth and competitive advantage. The future of work isn't about replacing humans—it's about amplifying human potential through intelligent automation. #AIAutomation #FutureOfWork #DigitalTransformation



Testing & Validation

Test Results:

Test 1 - Execution Time: 3.371 seconds

- ☒ Manual trigger: Success
- ☒ OpenAI generation: Success (7.316 seconds)
- ☒ Google Sheets logging: Success (3.371 seconds)

Test 2 - Content Uniqueness:

- ☒ Each execution generates unique content
- ☒ No duplicate posts observed
- ☒ AI maintains professional tone consistently

Test 3 - Data Integrity:

- ☒ Timestamps recorded accurately
 - ☒ Content saved completely without truncation
 - ☒ Status field populated correctly
-

Security & Authentication

API Credentials:

- **OpenAI API:** Secured with API key authentication
- **Google Sheets:** Authenticated via OAuth 2.0
- **n8n Platform:** Password-protected workspace

Data Privacy:

- All API keys stored securely in n8n credential system
 - No sensitive data exposed in workflow
 - Google Sheets accessible only to authorized users
-

Use Cases & Applications

Real-World Applications:

1. **Content Marketing Teams**
 - Automate social media content generation
 - Maintain consistent posting schedule
 - Track all generated content in one place
2. **Small Business Owners**
 - Generate professional posts without hiring writers
 - Save time on content creation

- Build online presence efficiently
 - 3. **Social Media Managers**
 - Create content drafts quickly
 - Log all posts for reporting
 - Analyze content performance over time
 - 4. **Personal Branding**
 - Generate thought leadership content
 - Maintain active LinkedIn presence
 - Track posting consistency
-



Benefits & Results

Key Advantages:

✓ Time Efficiency

- Reduces content creation time from 30+ minutes to 10 seconds
- Eliminates writer's block
- Enables consistent content output

✓ Cost Effective

- No need for dedicated content writers
- Minimal API costs (approximately \$0.002 per post)
- Scalable without additional resources

✓ Consistent Quality

- AI maintains professional tone
- Content follows predefined guidelines
- Eliminates human errors

✓ Automatic Documentation

- Every generated post logged automatically
 - Timestamps enable performance tracking
 - Easy audit trail for content history
-



Troubleshooting Guide

Common Issues & Solutions:

Issue 1: OpenAI Node Fails

- **Cause:** Invalid API key or rate limit exceeded
- **Solution:** Verify API key in credentials, check OpenAI account quota

Issue 2: Google Sheets Not Updating

- **Cause:** Incorrect data mapping or authentication expired
- **Solution:** Re-authenticate Google account, verify column names match

Issue 3: Workflow Execution Timeout

- **Cause:** Network connectivity or API response delay
- **Solution:** Check internet connection, retry execution

Issue 4: Duplicate Rows in Sheets

- **Cause:** Column matching configuration incorrect
 - **Solution:** Verify "Column to match on" setting or remove matching
-



Setup Instructions

Prerequisites:

1. n8n account (free tier available)
2. OpenAI API key with available credits
3. Google account with Google Sheets access

Installation Steps:

1. **Create n8n Workflow**
 - Sign up at n8n.io or use cloud instance
 - Create new workflow
 - Name it "AI LinkedIn Post Generator"
2. **Configure Manual Trigger**
 - Add "When clicking Execute workflow" node
 - No additional configuration needed
3. **Set Up OpenAI Node**
 - Add "OpenAI" node (Message a model)
 - Add OpenAI credential with API key
 - Configure model as "gpt-3.5-turbo"
 - Add prompt (see Node Configuration section)
 - Set temperature to 0.7, max tokens to 300
4. **Configure Google Sheets Node**
 - Add "Google Sheets" node
 - Authenticate with Google OAuth
 - Select spreadsheet and sheet
 - Map data fields (Timestamp, Content, Status)

- Set column matching preference
 - 5. **Test Workflow**
 - Click "Execute Workflow"
 - Verify all nodes turn green
 - Check Google Sheets for new entry
-

Demo Video Script

Video Duration: 2-3 minutes

Script Outline:

1. **Introduction (0:00-0:30)**
 - "Hello! Today I'll demonstrate my AI-powered LinkedIn post generator built with n8n automation."
 2. **Workflow Overview (0:30-1:00)**
 - Show n8n canvas with 3 nodes
 - Explain: Manual trigger → OpenAI → Google Sheets
 3. **Live Execution (1:00-1:45)**
 - Click "Execute Workflow"
 - Show nodes turning green
 - Highlight execution time
 4. **Results (1:45-2:30)**
 - Switch to Google Sheets
 - Show newly generated post
 - Read AI-generated content
 5. **Conclusion (2:30-3:00)**
 - Summarize benefits
 - Mention scalability and applications
-

Learning Outcomes

Skills Demonstrated:

1. **API Integration**
 - Connected multiple third-party services
 - Managed authentication and credentials securely
 - Handled API responses and data transformation
2. **Workflow Automation**
 - Designed end-to-end automated process
 - Configured trigger-based execution
 - Implemented error-free data flow
3. **AI/ML Application**

- Utilized large language models for content generation
 - Prompt engineering for desired outputs
 - Understood AI capabilities and limitations
4. **Data Management**
- Structured data storage in cloud spreadsheets
 - Implemented timestamp tracking
 - Created audit trail for generated content
-

Future Enhancements

Potential Improvements:

1. **Scheduled Automation**
 - Add time-based trigger (daily/weekly posts)
 - Auto-publish to LinkedIn via API
 - Send notification emails with generated content
 2. **Content Variety**
 - Multiple prompt templates for different topics
 - Industry-specific content generation
 - Hashtag optimization based on trending topics
 3. **Analytics Dashboard**
 - Track generation frequency
 - Analyze content performance metrics
 - Visualize posting patterns over time
 4. **Multi-Platform Support**
 - Extend to Twitter/X post generation
 - Blog post creation
 - Email newsletter content
 5. **Advanced AI Features**
 - Image generation for posts
 - Sentiment analysis of generated content
 - A/B testing different AI models
-

References & Resources

Documentation:

- n8n Documentation: <https://docs.n8n.io>
- OpenAI API Reference: <https://platform.openai.com/docs>
- Google Sheets API: <https://developers.google.com/sheets/api>

Related Technologies:

- Automation workflows and no-code platforms
- Natural Language Processing (NLP)
- RESTful API integration
- OAuth 2.0 authentication