

Automating Research Scoping and Reviews with Agentic AI

EE489 Seminar in Industrial Economics

By

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Date: Saturday, January 31, 2026

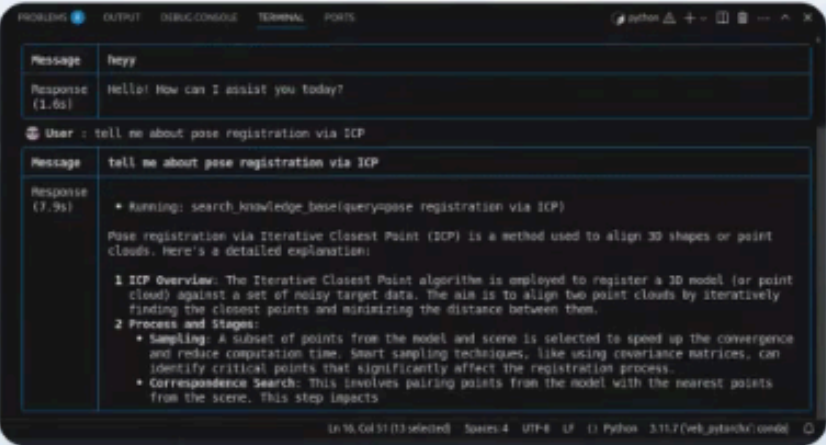
Time: 09.00-12.00 hrs.

Venue: Room 207, 2nd floor, Faculty of Economics. Thammasat University, Thaprachan

Agentic AI

Agentic AI

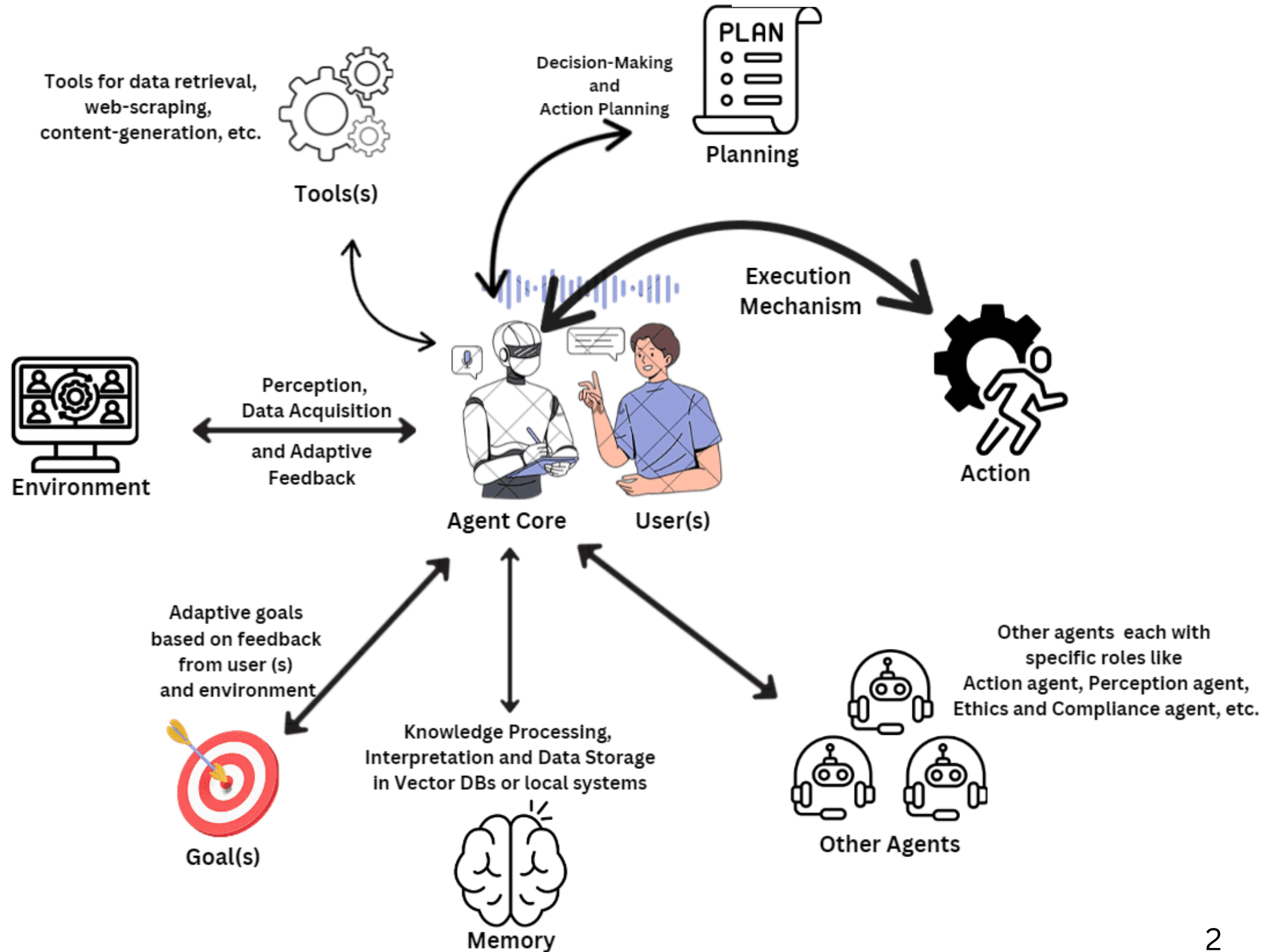
A Comprehensive Introduction



Agentic AI: A Comprehensive Introduction

Explore Agentic AI and learn how to build no-cost Agentic RAG applications using CrewAI and Phidata frameworks to enhance AI capabilities and automation.

LearnOpenCV – Learn OpenCV / Mar 26, 2025



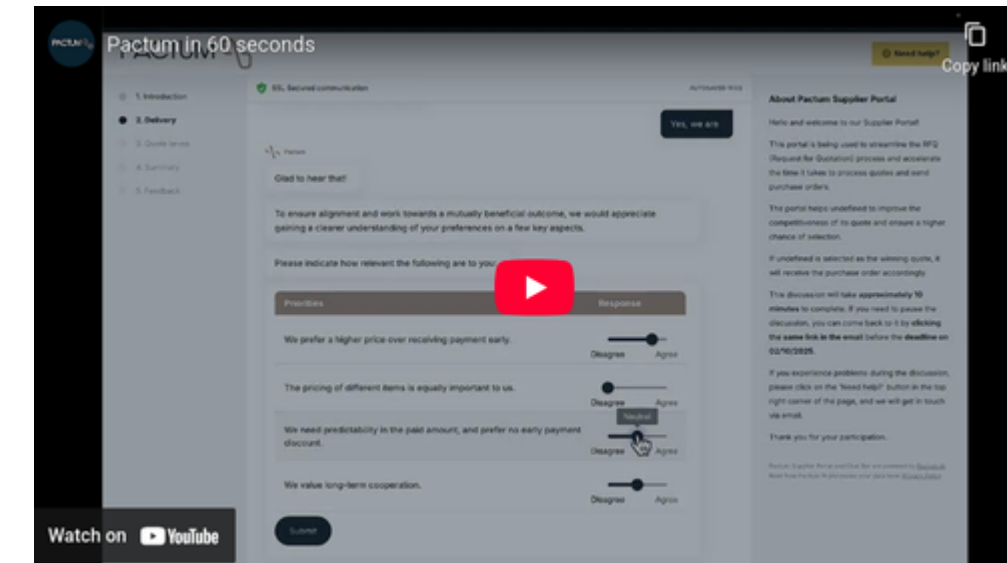
Agentic AI: Procurement



How Walmart Automated Supplier Negotiations

It's an age-old problem in procurement: Corporate buyers lack the time to negotiate fully with all suppliers. Historically this has left untapped value on the table for both buyers and suppliers. To address this challenge, Walmart deployed AI-powered...

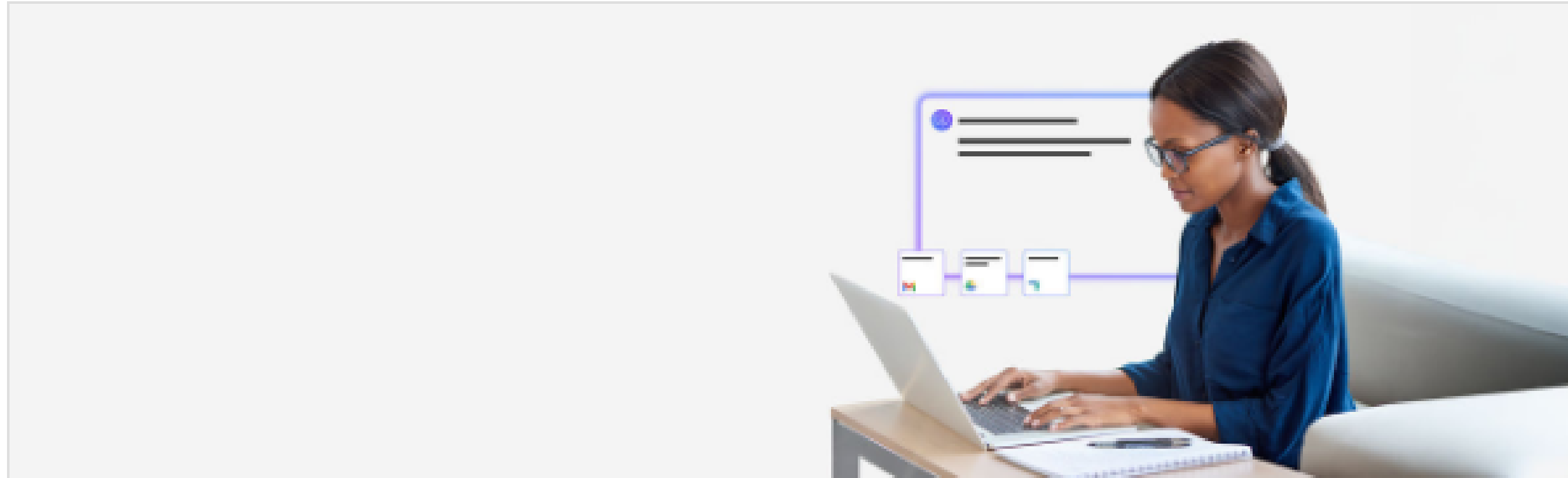
 Harvard Business Review / Nov 8, 2022



The leader in agentic AI for procurement for over half a decade

Pactum AI agents help companies unlock hidden value. Our agentic AI negotiates non-strategic supplier contracts on a massive scale.

 Pactum

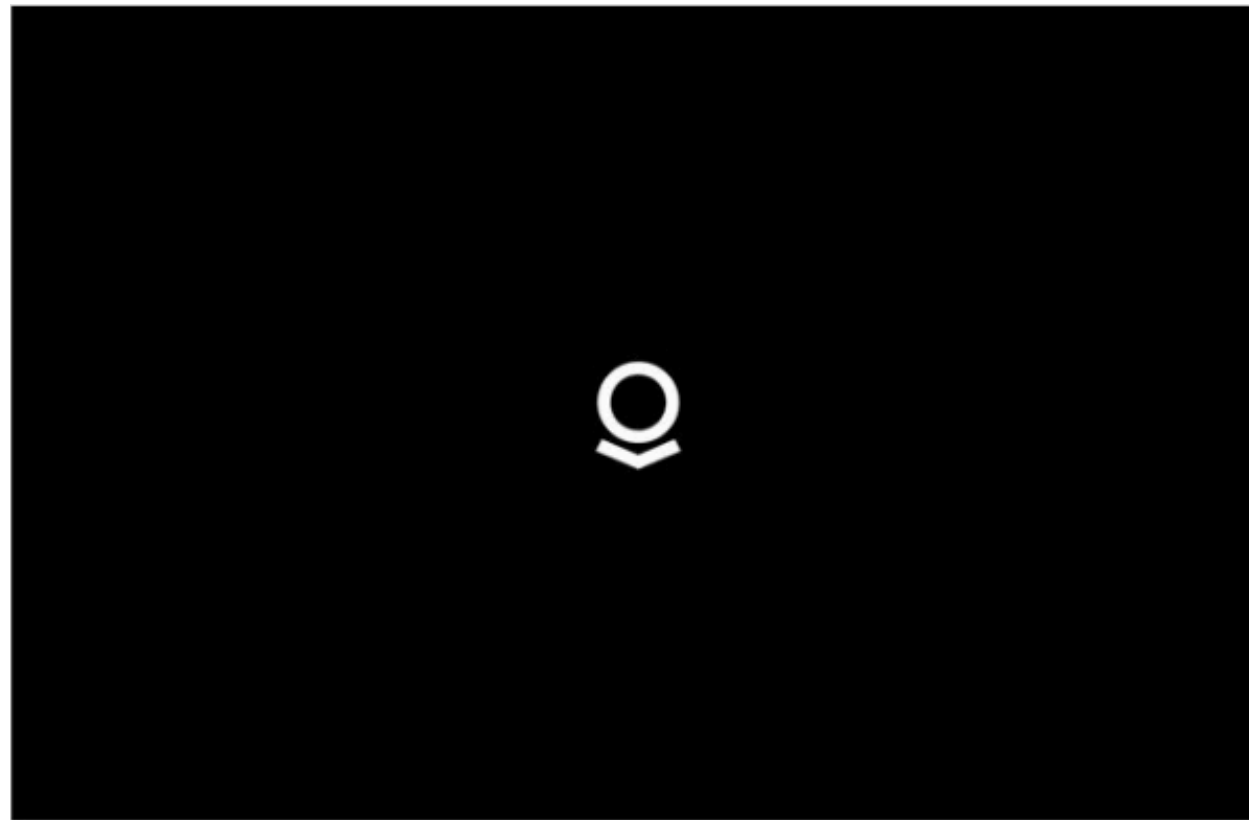


AI Agents for HR

Deploy swiftly with an AI agent that streamlines workflows, freeing employees and HR professionals from repetitive, time-consuming tasks.

 [ibm.com](https://www.ibm.com)

Agentic AI: Decision-Maker



Palantir

Foundational Software of Tomorrow. Delivered Today.™



Palantir AIP | Defense and Military

Area of Interest /

INTRODUCING AIP FOR DEFENSE AND MILITARY

Show me more details

AIP Assistant

Alert - Anomalous military activity detected

Here are additional details about this alert.

SAR Imagery
29 April 2023 15:35Z

Summary
This satellite image was captured 8 minutes ago. An algorithm that detects military equipment found 5 pieces of equipment in the image.

Details

Timestamp	
Satellite	
Imagery Type	SAR
Image Quality	1m
Algorithm	Military Vehicle Detector V25.3.0

Hand-off Inspector

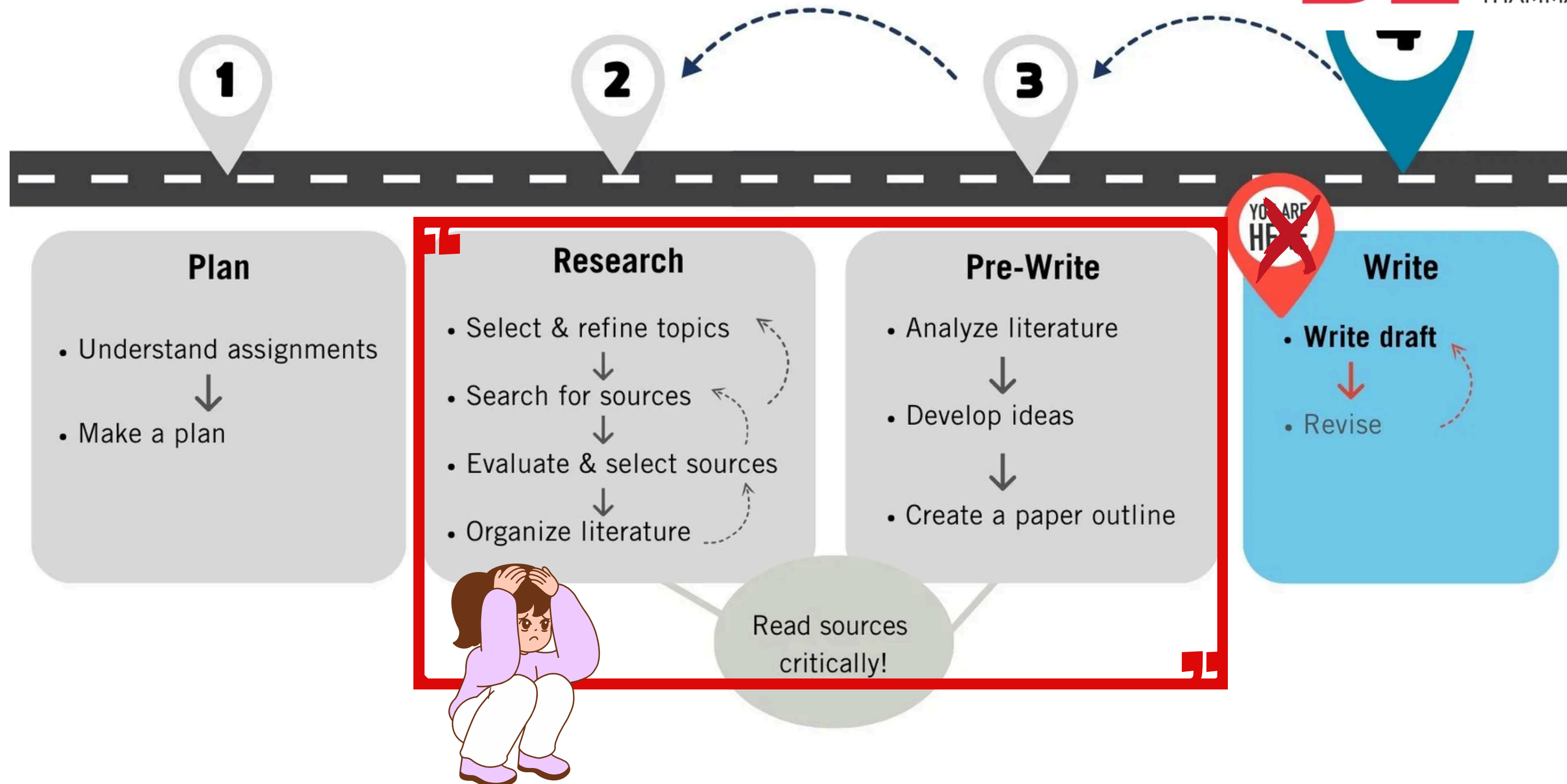
What military unit is in the region?

Start typing something to explore with AIP...

Watch on YouTube

Let's implement some AI automation for research!

Finding the actually high quality papers



Source: OISE Academic Skills Hub, Ontario Institute for Studies in Education

University of Toronto (<https://www.oise.utoronto.ca/skillshub/resources/how-draft-academic-paper>)

The Pains

https://scholar.google.com/scholar_labs/search?hl=en

Google Scholar | Labs

Ask a detailed research question to find relevant papers

Example questions

Has anyone used single molecule footprinting to examine transcription factor binding in human cells?

Are hydrogen powered cars, compared to electric / internal combustion engine cars, really better for the environment?

What is the standard of care for intraductal papilloma without atypia? When is surgical excision recommended, and when can it be managed conservatively?

Find papers from the past 2 years about how to determine whether an abstractive summary generated by an LLM is grounded.

Ask Scholar

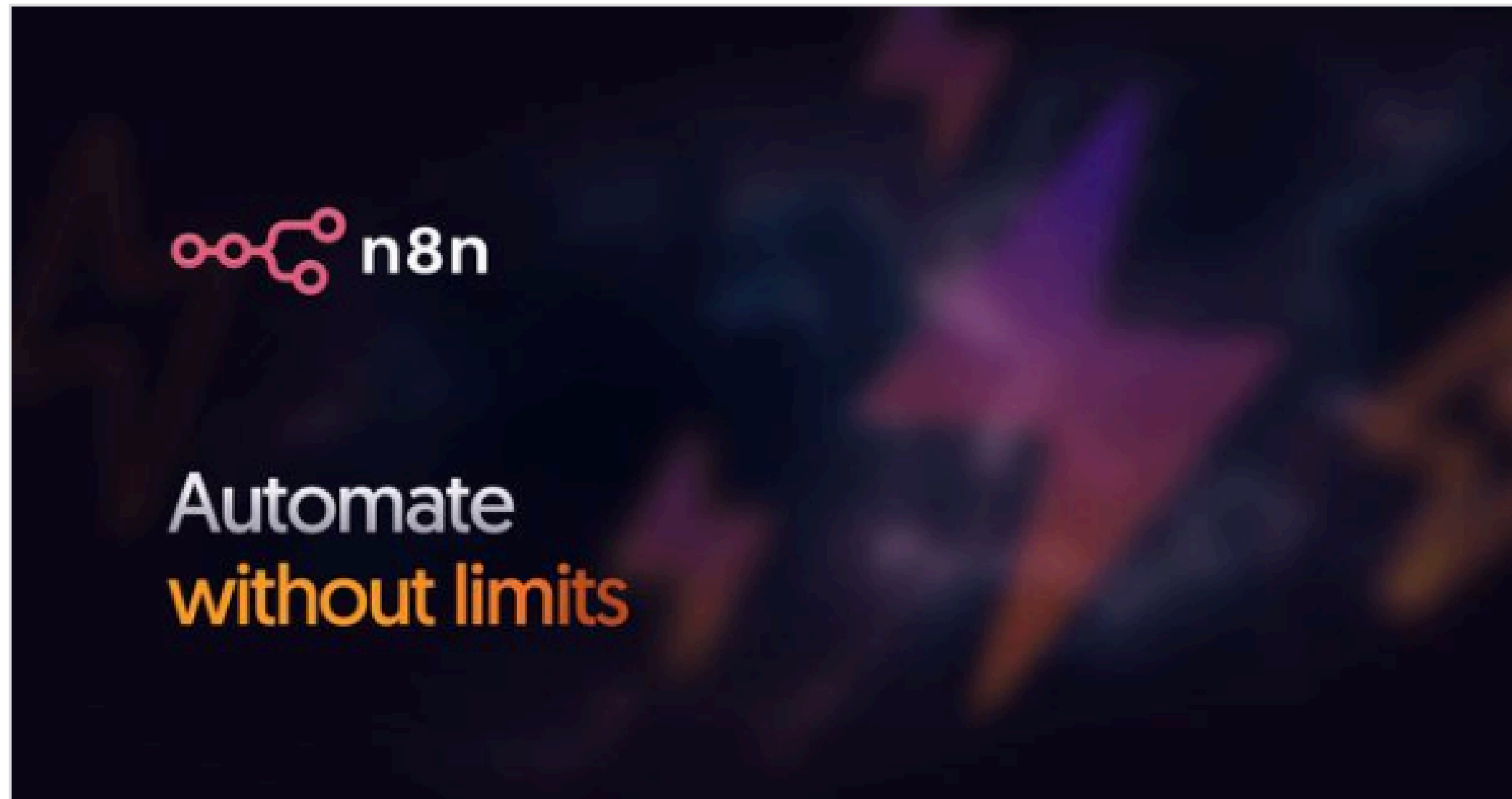


still haven't found the high quality papers for our research!

**keywords relevancy is not enough -
it is how the papers were conducted!**

I want the main paper(s) asap

A Found Solution of Many



Automate systematic literature reviews with Google Drive, GPT-4, Gemini, Qdrant and Airtable | n8n workflow template

How it works Automates systematic literature review by downloading papers from Google Drive, extracting text, and evaluating them against strict...

 n8n_io

How it works

- Automates systematic literature review by downloading papers from Google Drive, extracting text, and evaluating them against strict inclusion/exclusion criteria using LLM agents
- Routes included papers to Qdrant vector stores with Gemini embeddings for semantic search, and excluded papers to a separate folder
- Logs all decisions to Airtable with PRISMA-compliant justification for complete audit trails

Set up steps

- Connect Google Drive credentials to access your paper folder
- Configure Airtable base and table for decision logging
- Add OpenAI (GPT-4) and Google Gemini API credentials for LLM evaluation and embeddings
- Set up Qdrant instances for vector storage (supports up to 3 collections)
- Keep detailed descriptions of your inclusion/exclusion criteria in the sticky notes inside your workflow

Google Scholar

Google Scholar provides a simple way to broadly search for scholarly literature. Search across a wide variety of disciplines and sources: articles, theses, books, abstracts and court opinions.

 [google.com](https://scholar.google.com)

Requirements



Automate
without limits

AI workflow automation tool

n8n is a free and source-available workflow automation tool

 [n8n_io](https://n8n.io)



Google Gemini

Meet Gemini, Google's AI assistant. Get help with writing, planning, brainstorming, and more. Experience the power of generative AI.

 Gemini

OpenAI

OpenAI

We believe our research will eventually lead to artificial general intelligence, a system that can solve human-level problems. Building safe and beneficial AGI is our mission.

 OpenAI



Cloud APIs

Access Google Cloud products like BigQuery and Compute Engine from your code using REST APIs.

 Google Cloud



Qdrant Vector Database

Qdrant

Qdrant is an Open-Source Vector Database and Vector Search Engine written in Rust. It provides fast and scalable vector similarity search service with convenient API.

 qdrant.tech



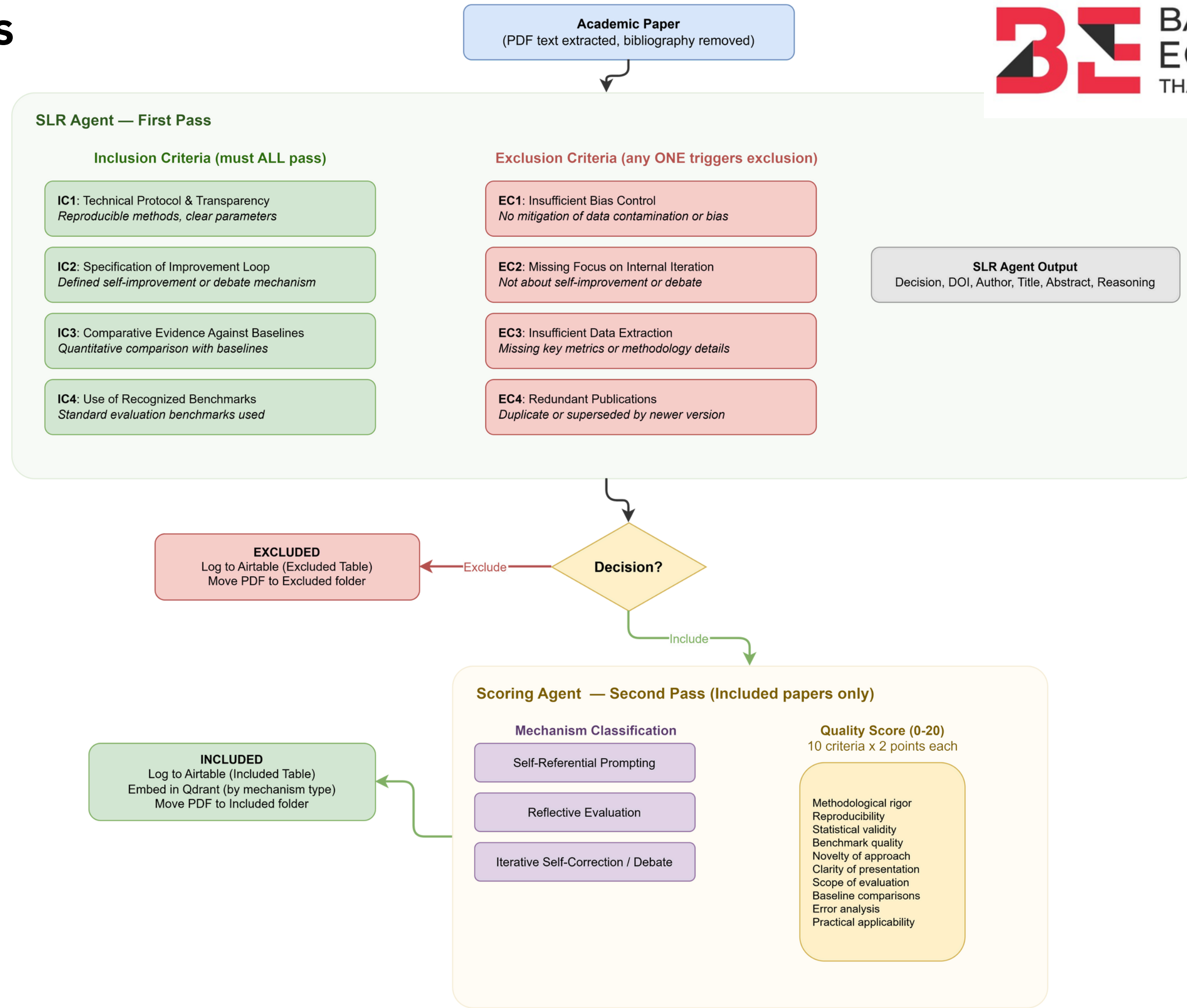
AI App Building for Enterprise

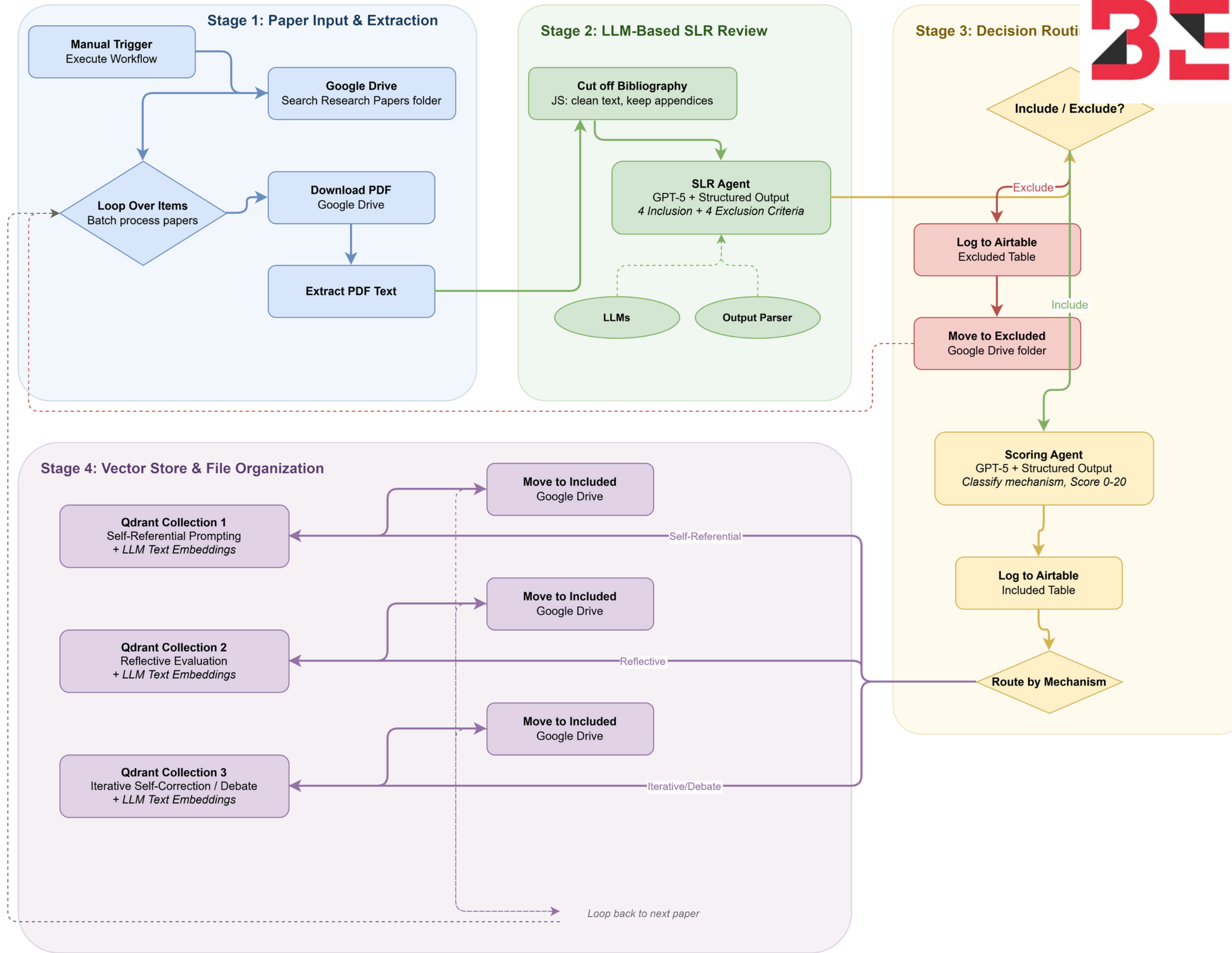
Airtable is the AI-native platform for building trusted AI apps to accelerate business operations and deploy embedded AI agents at enterprise scale.

 Airtable

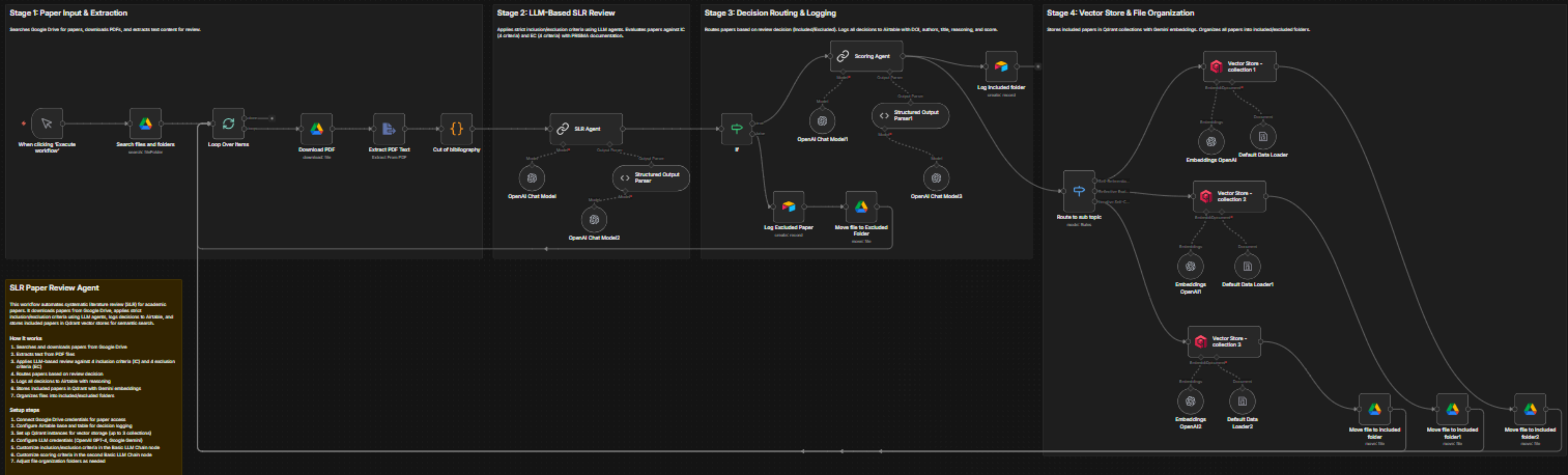
How it works

PRISMA SLR Decision Process





The Agentic AI workflow



However, this workflow's ICs and ECs are not for us (the economist!)

The Cores: System Prompts for the Multi-Agent Workflow

1. The SLR Agent

ROLE

You are a strict academic reviewer conducting a Systematic Literature Review (SLR) on "LLM Self-Improvement and Debate Mechanisms". Your ONLY task is to strictly filter the provided paper based on the defined Inclusion Criteria (IC) and Exclusion Criteria (EC).

INCLUSION CRITERIA (IC) – Reject if ANY are missing or incomplete:

- **IC 1: Technical Protocol & Transparency:** The paper must not only name the base LLM, but also its specific version (e.g., GPT-4-Turbo-1106-preview) and report at least one central hyperparameter such as temperature. Without these details, validity for methodological comparison is not given.
- **IC 2: Specification of the Improvement Loop (Intervention):** The study must describe the architecture of the self-improvement mechanism (e.g., feedback cycle, prompt chaining, or multi-agent interaction) in sufficient detail for the process to be methodologically traceable.
- **IC 3: Comparative Evidence Against Baselines (Comparison):** The paper must explicitly compare the results of the self-improvement mechanism against a defined baseline (e.g., standard zero-shot or single-agent chain-of-thought). Isolated performance numbers without a comparison basis are insufficient.
- **IC 4: Use of Recognized Benchmarks (Outcomes):** The evaluation must be based on standardized datasets (e.g., GSM8K, MMLU, QuALITY) or scientifically grounded metrics (e.g., Elo rating, accuracy, Performance Gap Recovered).

EXCLUSION CRITERIA (EC) – Reject if ANY are met:

Workshop

1. Set up the Workflow
2. Modify the System Prompts for economics and finance papers
3. Modify the Workflow
4. Find some economics and finance papers
5. Execute the workflow and get the results

Expected Results

Table 1 Table 2 + Add or import									
Grid view Hide fields Filter Group Sort Color Share and sync									
	DOI	Author	Titel	Abstract	Decision	Decision Reasoning	Score	Mechanism	Additional notes
1	Not Found	Wilbur Xinyuan Chen; Suraj...	Displacement or Complem...	Using O*NET tasks and Lig...	Included	Strengths: The paper poses...	15.0	Causal Empirical Identificati...	HBS Working Paper 25-039...
2	10.3386/w...	Daron Acemoglu	The Simple Macroeconomi...	The paper develop...	Includ...	Strengths: The paper clear...	16.0	Structural / Theoretical Mo...	NBER Working Paper No. 3...
3	10.3386/w...	Menaka Hampole; Dimitris ...	Artificial Intelligence and th...	The paper looks at firm acc...	Included	Clarity: The economic ques...	19.0	Causal Empirical Identificati...	NBER Working Paper No. 3...
4	10.1057/s...	Yang Shen and Xiuwu Zhang	The impact of artificial intel...	Using panel data for 30 Chi...	Included	Strengths: Clear economic ...	14.0	Causal Empirical Identificati...	Robot exposure constructe...
5	Not Found	Swapnani SenGupta	Labour Market Outcomes o...	Using a panel of 69,783 fir...	Included	Strengths: The paper poses...	14.0	Causal Empirical Identificati...	No DOI reported; working-...

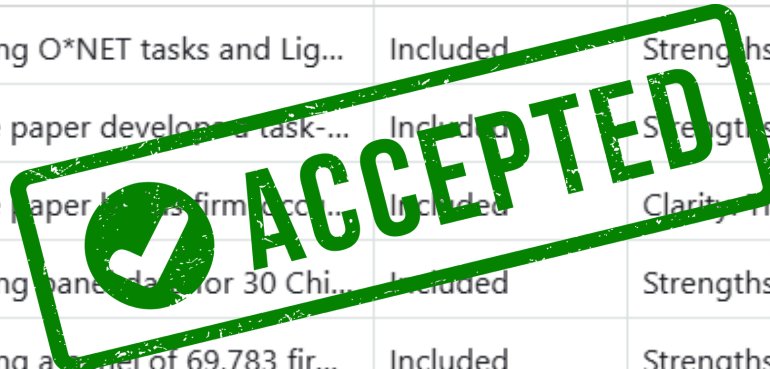


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Grid view Hide fields Filter Group Sort Color Share									
	D...	Author	Titel	Abstract	Deci...	Decision Reasoning	Score	Additional notes	
1	10.2094...	Satyadhar Joshi	Introduction to Generative ...	This concept paper provide...	Excluded	Excluded based on EC 2: No testa...	ICs met: 0/4; ECs triggered:...	Preprint/Concept paper (H...	
2	10.2478...	Živko Krstić	Economic Theory and Artifi...	This study examines the rel...	Excluded	Excluded based on IC 1, IC 3, and ...	ICs failed: 1, 3, 4; EC trigger...	Narrative SLR synthesizing ...	
3	Not Fo...	Abdulhalik Pinar	Technological Unemploym...	The study examines the ris...	Excluded	Excluded based on EC 2: No testa...	IC met: 0/4; EC triggered: E...	Narrative literature review ...	
4	10.2478...	Marianne Saam	The Impact of Artificial Inte...	This forum article surveys h...	Excluded	Excluded based on EC 2: the pape...	ICs unmet: 1-4; EC2 trigger...	Forum-style overview lacki...	
5	10.1108...	Mohamed Ali Trabelsi	The impact of artificial intel...	Purpose – This paper revie...	Excluded	Excluded based on IC 1-4: purely ...	0/4 ICs satisfied; EC2 trigge...	Journal of Electronic Busine...	
6	10.2139...	Afsaneh Jabbari; Jafar Azizi	The Role of Artifical Intelig...	Artificial Intelligence (AI) h...	Excluded	Excluded based on EC 2: No testa...	ICs met: 0/4; EC triggered: ...	Narrative overview/review ...	
7	10.5281...	Dr. A. Shaji George	Automated Futures: Examin...	Automation and artificial in...	Excluded	Excluded based on EC 2: No testa...	ICs met: 0/4; ECs triggered:...	The paper is a broad narrat...	
8	Not Fo...	Fozia Sultana; Urooj Talpur;...	The Macroeconomic Implic...	Artificial intelligence (AI) an...	Excluded	Excluded based on IC 1-4 and EC ...	IC met: 0/4; EC triggered: E...	Generic, largely descriptive ...	
9	Not Fo...	Matthew Chan	Analyzing the Impacts of A...	This study explores how art...	Excluded	Excluded based on EC 1: The stud...	IC compliance: 0/4; EC trig...	BLS data source is stated b...	
10	10.4817...	Satyadhar Joshi	Generative AI: Mitigating ...	A Systematic Review of AI's...	Excluded	Excluded based on IC 1, IC 2, IC 3,...	IC satisfied: 0/4; EC triggere...	Narrative literature review ...	

