

ICC AI-Enabled RFP Support: Automated Grant Matching System

by

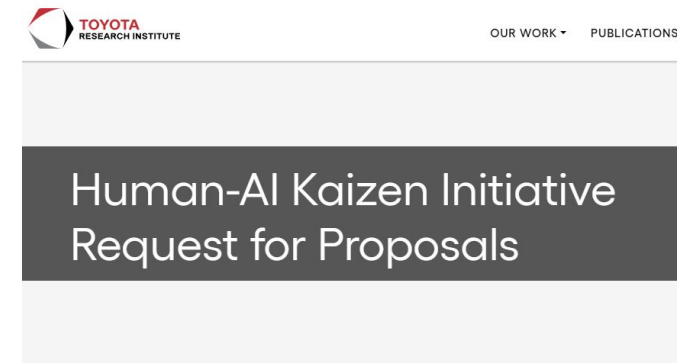
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How do we search for an RFP grant ?

- Of course, manually, where through Google Search LinkedIn, or professional networks!

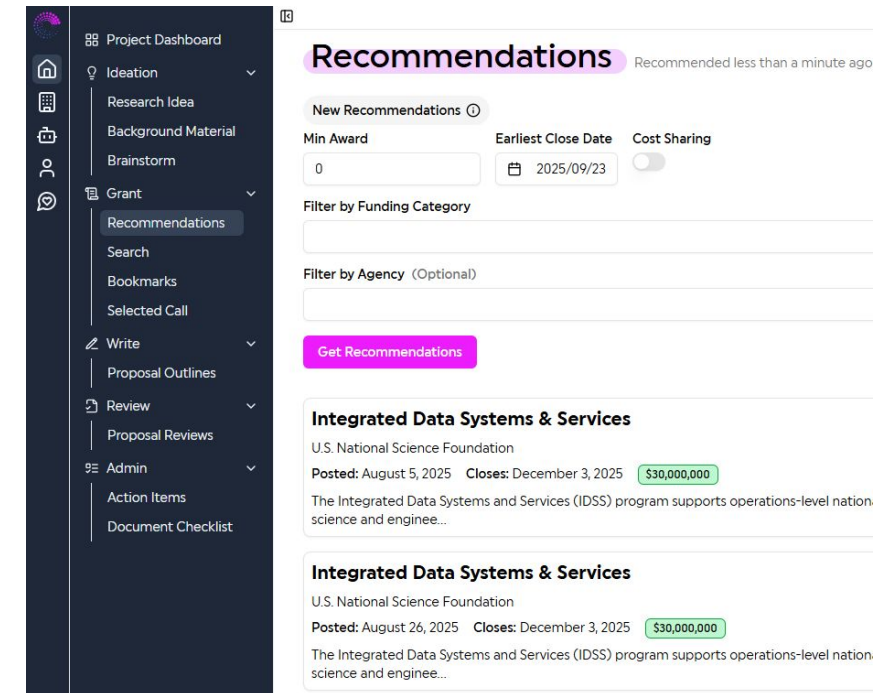
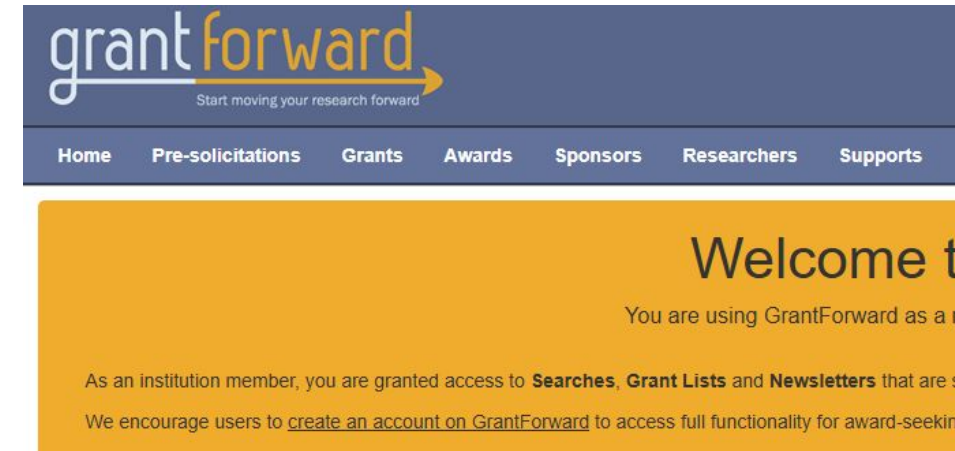
The Struggle

- Manually search RFPs across dozens of portals
- Deadlines missed, opportunities overlooked
- Time lost in filtering eligibility



Existing Search Solutions

- Grantforward
- GrantWatch
- AI-Platforms
- Not MTU-specific!
- Misses some opportunities!

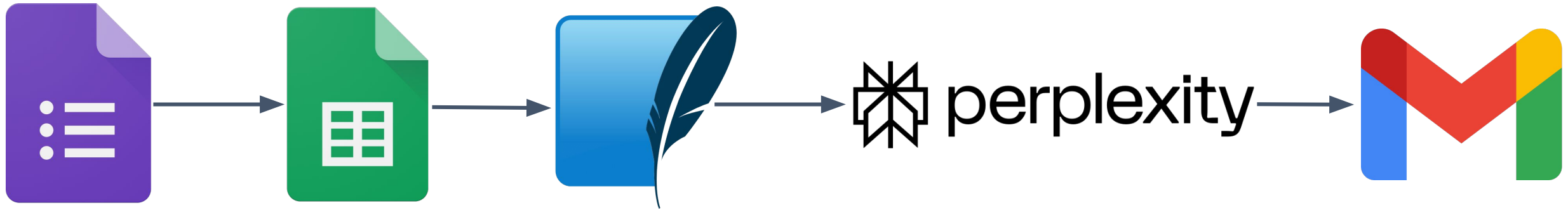


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Our Solution

- Automated, AI-enabled RFP matching system
- Tailored opportunities delivered directly to inbox
- Uses Google Forms, Sheets, Gmail, and Perplexity AI for scale
- A SQL database to maintain and schedule the queries.





ICC AI-Enabled RFP Search Form (Trial)

TRIAL: This is a form for ICC members to request AI-enabled RFP searching. Requests will be sent to ICC administration for review and further engagement.

nmokkapa@mtu.edu [Switch account](#)



The name, email, and photo associated with your Google account will be recorded when you upload files and submit this form

* Indicates required question

Email *

Your email

Briefly describe your RFP research area of interest. *

Your answer

List 3-5 relevant keywords *

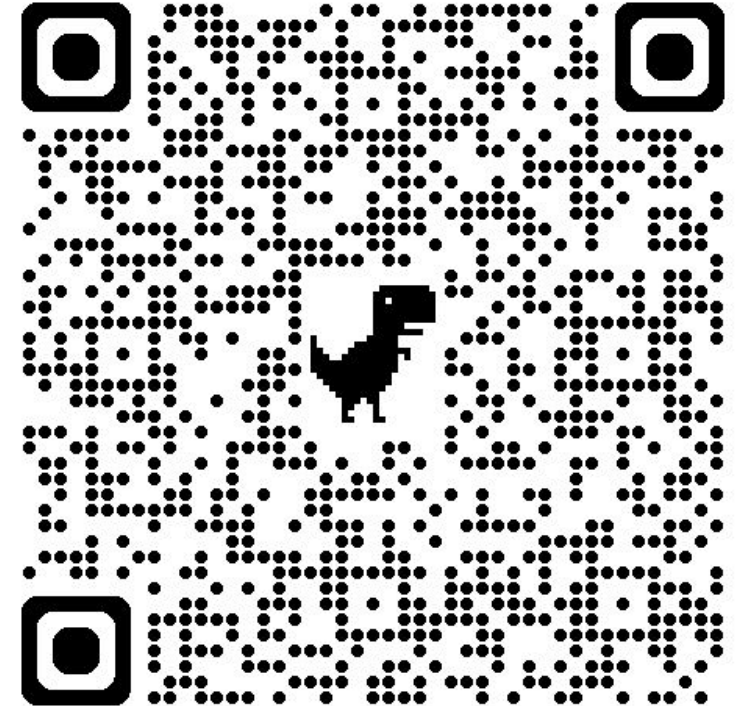
Your answer

Are there any constraints on your eligibility to RFP's? If there are no constraints, please state "no". *

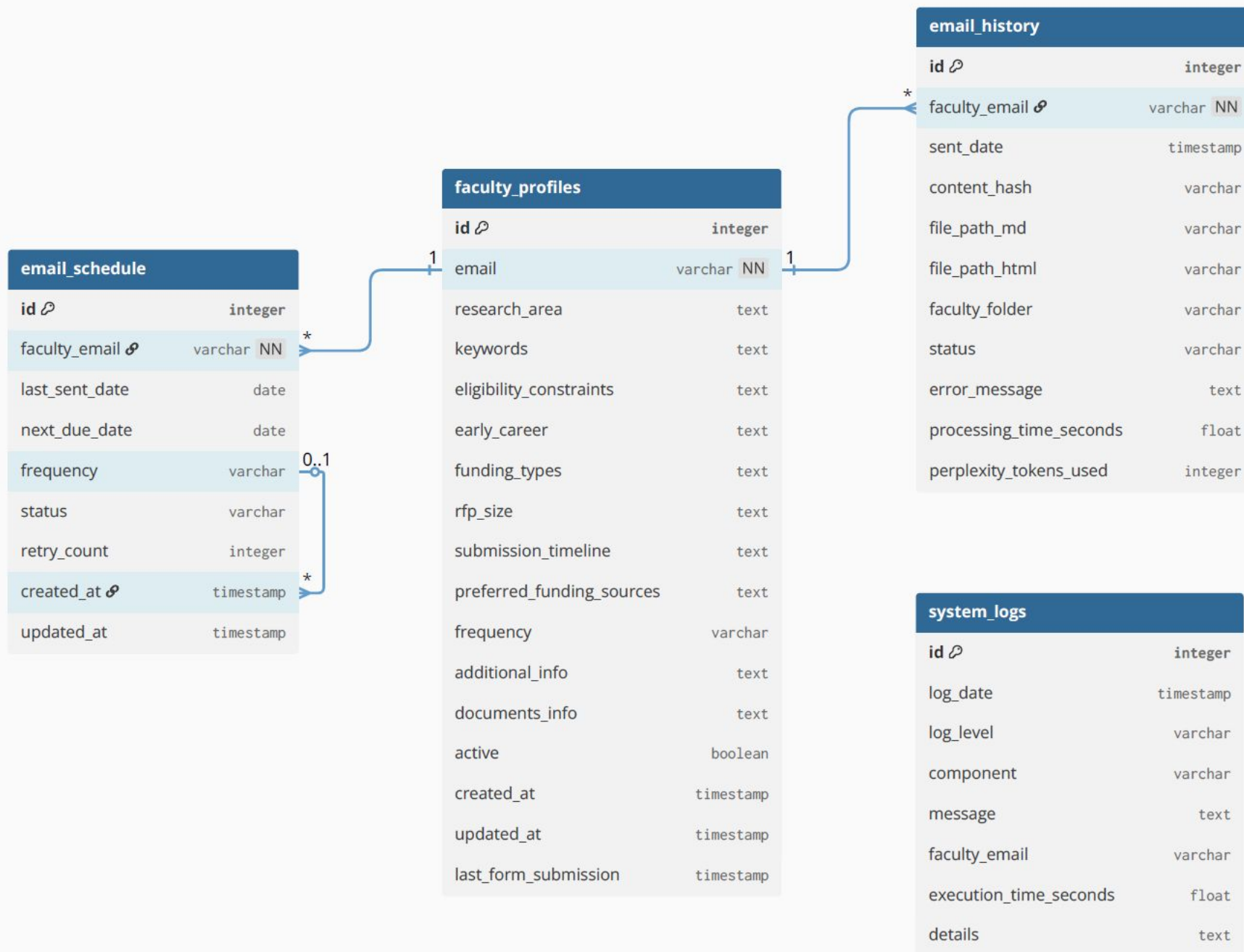
Your answer

Are you an early career researcher? *

☐ Yes



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Why SQLite?

- Not a web application
- Do not need user-level security(Single-user dev) and advanced SQL features
- Hosting locally in LattePanda SBC
- File-based storage



AI-Powered Content Generation

(Perplexity AI Integration)

- Model: [sonar-deep-research](#)
- Builds custom search queries based on each faculty member's specific research interests, keywords, and constraints
- Personalized and structured prompts for content generation.



AI Prompt configuration

```
# print(eligibility_constraints)

instructions = "I am a Michigan Technological University professor that is looking to submit to grant proposals that are due in the future. Do NOT list RFP's provided by Michigan Technological University. "

mid = (    "My RFP research area of interest is " + research_areas[index] +
        ". My keywords are " + keywords[index] +
        ". My constraints on eligibility are " + eligibility_constraints[index] +
        ". My early career faculty status is " + early_career[index] +
        ". My funding types are " + funding_types[index] +
        ". The size of the RFP I'm interested in are " + rfp_size[index] +
        ". I would like to submit a proposal " + submission_timeline[index] +
        ". My please consider funding sources including " + preferred_funding_sources[index] + ". "
    )

main_prompt = ("Search for at least 10 eligible US RFP's online "
    + "and consolidate into a markdown table that lists the funding agency, program name, focus area, award range, and deadline."
    )

text_body = instructions + mid+ main_prompt
```



AI Prompt configuration

INSTITUTION_NAME = "Michigan Technological University"

PROMPT_INSTRUCTIONS = (f"I am a professor at {INSTITUTION_NAME}, seeking relevant upcoming grant opportunities "
f"- **DO NOT** include: RFPs issued by {INSTITUTION_NAME}; **RFPs with deadlines that have already passed** or **expired RFPs.**\n")

PROMPT_REQUEST = ("Search for at least **10 eligible and active U.S.-based RFPs** that align with my research interests.\n\n"
"Start your response with a markdown table" listing the opportunities. Do not include any explanation before the table.\n\n"
"The table should have the following columns:\n"
"- Funding Agency\n" "- Program Name\n" "- Focus Area \n" "- Award Range \n" "- Clickable Website Link\n" "- Deadline \n\n"
"Make sure the table is at the top of the generated results, you can provide the information concisely about notable opportunities."
"Ensure the results are current, relevant, and aligned with common academic grant interests.")



```

def _build_comprehensive_prompt(self, faculty_data: Dict) -> str:
    """Build comprehensive prompt using faculty data"""

    # Base instructions
    instructions = PROMPT_INSTRUCTIONS

    # Faculty-specific context
    faculty_context_parts = []

    if faculty_data.get('research_area'):
        faculty_context_parts.append(f"My RFP research area of interest is {faculty_data['research_area']}")

    if faculty_data.get('keywords'):
        faculty_context_parts.append(f"My keywords are {faculty_data['keywords']}")

    if faculty_data.get('eligibility_constraints'):
        constraints = faculty_data['eligibility_constraints']
        if constraints.lower() not in ['no', 'none', 'no constraints']:
            faculty_context_parts.append(f"My constraints on eligibility are {constraints}")

    if faculty_data.get('early_career'):
        faculty_context_parts.append(f"My early career faculty status is {faculty_data['early_career']}")

    if faculty_data.get('funding_types'):
        faculty_context_parts.append(f"My funding types are {faculty_data['funding_types']}")

    if faculty_data.get('rfp_size'):
        faculty_context_parts.append(f"The size of the RFP I'm interested in are {faculty_data['rfp_size']}")

    if faculty_data.get('submission_timeline'):
        faculty_context_parts.append(f"I would like to submit a proposal {faculty_data['submission_timeline']}")

    if faculty_data.get('preferred_funding_sources'):
        faculty_context_parts.append(f>Please consider funding sources including {faculty_data['preferred_funding_sources']}")

    if faculty_data.get('additional_info'):
        faculty_context_parts.append(f"Additional context: {faculty_data['additional_info']}")

    # Combine all parts
    faculty_context = ". ".join(faculty_context_parts) + ". " if faculty_context_parts else ""

    # Complete prompt
    complete_prompt = instructions + faculty_context + PROMPT_REQUEST

    return complete_prompt

```

Outputs

ICC AI-Enabled RFP Results for nmokkapa, 2025-09-22



icc-intake@mtu.edu
to nmokkapa, ajstump, townsend ▾

9:06 AM (6 hours ago) ☆ ↶ ⋮

Hello,

This is an automated email from the ICC Proposal-Enabled AI Support Initiative. An HTML output file generated by Perplexity AI containing relevant RFP opportunities based on your Google Form responses is attached.

To access the information, you can download the HTML file and open it in your browser. We're still working on how to send the citations in an email, but we'll aim to have that available soon.

Feel free to let me know if you are unable to access the information, and if you would like to revise your answers, you can revise your responses to the Google Form.

Thank you,

Center for AI
Institute of Computing and Cybersystems
Michigan Technological University

One attachment • Scanned by Gmail ⓘ



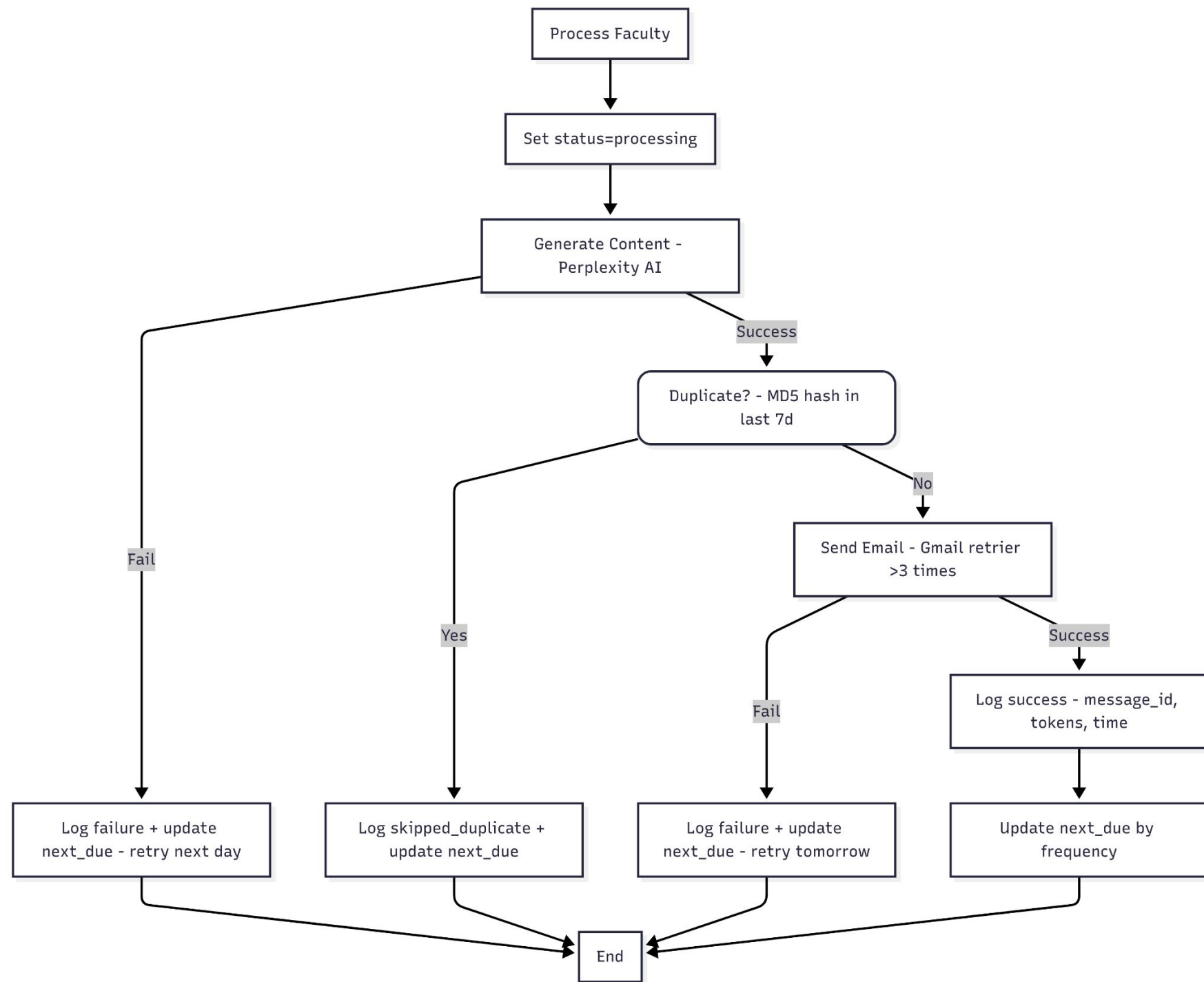
Outputs

Funding Agency	Program Name	Focus Area	Award Range	Website Link	Deadline
NSF	Smart Health and Biomedical Research in the Era of AI	AI/ML in healthcare, multimodal systems	Up to \$1M over 4 years	NSF 25-542	October 3, 2025
NSF	Faculty Early Career Development (CAREER)	All AI research areas	\$400K+ over 5 years	NSF CAREER	July 2026 (Annual)
NVIDIA	Academic Grant Program	Generative AI, Vision-Language Models	Hardware + Software grants	NVIDIA Academic	June 30, 2026
Amazon	Research Awards Spring	AI for various applications	Up to \$100K + AWS credits	Amazon Research Awards	April 30, 2026
Google	ML and Systems Junior Faculty Awards	ML systems, computer vision	\$100K unrestricted	Google Research	Rolling
NSF	National AI Research Institutes	Materials discovery, foundational ML	\$10-20M over 5 years	NSF AI Institutes	Spring 2026
IAIFI	Postdoctoral Fellows	AI + Physics intersection	Postdoc salary + benefits	IAIFI Fellows	February 15, 2026
NIH/NCI	AI in Cancer Research	Computer vision for medical imaging	\$220K-\$600K/year	NCI Funding	Various deadlines
Microsoft	AI & Society Fellows	AI ethics, fairness	Research collaboration	Microsoft Research	Annual call
NEH	Humanities Research Centers on AI	AI + Humanities	Up to \$750K over 3 years	NEH AI Centers	October 1, 2025

Funding Agency	Program Name	Focus Area	Award Range	Website Link	Deadline
NSF	Computer and Information Science and Engineering Research Initiation Initiative (CRII)	Computer Science, AI/ML	Up to \$175,000	NSF CRII	Typically September (Annual)
NSF	Faculty Early Career Development Program (CAREER)	Interdisciplinary AI Research	\$400,000+ over 5 years	NSF CAREER	Typically July (Annual)
NSF	Building Research Capacity of New Faculty in Biology (BRC-BIO)	AI in Biological Sciences	Up to \$500,000	NSF BRC-BIO	Spring/Summer (Annual)
Alfred P. Sloan Foundation	Sloan Research Fellowships	Computer Science, AI	\$75,000 over 2 years	Sloan Fellowships	September 15 (Annual)
NSF	Artificial Intelligence Research	AI, Machine Learning, Computer Vision	Varies	NSF AI Focus	Rolling/Multiple Programs



Email Processor



Automation

This will run 24/7.

Should we run this script on:


- The cloud?
- An IT-managed machine?
- Our own PC?

Hosting locally in LattePanda SBC



Standard / Basic Desktop Computer

Starting Price: \$725

 Cloud Run

Build apps or websites quickly on a fully managed platform

Run frontend and backend services, batch jobs, host LLMs, and queue processing workloads without the need to manage infrastructure.

Get two million requests free per month.

[Try it in console](#) [Contact sales](#)



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Automation

We don't want any human interaction



TaskScheduler- A Windows utility that automates tasks, such as running programs, scripts, or system maintenance processes, based on time-based triggers

Trigger: Daily

Start time: 9:00AM

Emails: On Mondays (Weekly/Bi-Weekly/Monthly)



Logging:

```
2025-09-22 09:06:45,919 - main - INFO - Faculty processing completed: {'processed': 10, 'sent': 10, 'failed': 0, 'skipped': 0}
2025-09-22 09:06:45,919 - main - INFO - Step 3: Generating system status
2025-09-22 09:06:53,883 - __main__ - INFO - === Full Automation Completed Successfully in 438.00s ===
2025-09-22 09:06:53,883 - __main__ - INFO - Summary: 14 faculty synced, 10 emails sent
```



Upcoming Upgrades

Simple

- Cleaning up the .html file and Download to view as pdf
- Adding an option “right now” in google form
- Ask for customer feedback and respond accordingly

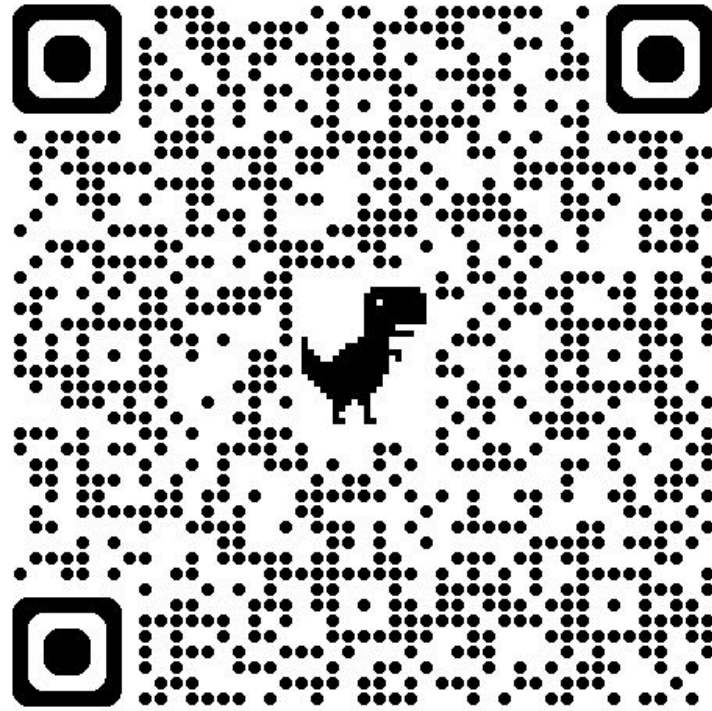
Harder

- Integrating past MTU submission data into the search

Really Hard

- Suggesting teams and ideas for solicitations identified in the searches to the PI





Thank You!



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