

AI for Impact

APAC Hackathon 2024

A social-first initiative



Team name: **Padayon Ko**

Team leader name: **Carl Vincent Ladres Kho**

View Video →
or
view the
[better Pitch Deck](#)



Problem Statement: 3.3 million Filipino high school students forgo college due to financial constraints and the complex, scattered nature of scholarship information and applications. Many lack access to resources for standardized tests like the SAT and English proficiency exams.

Brief about the Idea:

3.3 million Filipino high school students forgo college due to financial barriers. ([Parreño, 2023](#))



Padayon Ko uses AI to simplify scholarship applications, providing a centralized resource, personalized essay assistance, and test prep tools, empowering students to pursue higher education.

Problems

3.3 million Filipino high school students forgo college due to financial constraints.
(Parreño, 2023)

Scattered Scholarship Information & Complex Application Process

Lack of accessible and engaging resources for SAT and English proficiency tests.

School counselors with limited time & resources to provide individualized support.

Existing Alternatives

Manually search through scattered websites, social media groups, and rely on word-of-mouth.

ChatGPT to produce impersonal, detectable AI-generated content.

Expensive Test Prep Tutors

Solutions

Centralized database of local and international scholarships with step-by-step instructions.

Onboarding and AI tools available in English, Tagalog, and Cebuano (+ more).

Socratic practice bot tailored to interests for Math.

Personalized essay writing and achievement tracking with AI assistance (not AI-sounding).

Verbal speaking practice for English.

Key metrics

Number of Platform Users & Month-over-Month User Growth

Scholarship Application Completion & Award Rate

User Engagement of achievement tracker, essay writer, and practice bots.

Social Media Reach and Engagement

Unique Value Proposition

Padayon Ko is the only **AI-driven platform** offering a completely personalized and comprehensive scholarship journey for Filipino students.

Beyond merely listing opportunities, it uses AI to match students with the most relevant scholarships, assist with personalized essay generation, track achievements, and provide tailored test preparation for exams like TOEFL or IELTS.

The platform empowers students through a **multilingual** interface that ensures accessibility across diverse communities.

Unlike platforms focused on job applications, Padayon Ko is tailored to bridge education and opportunity for underserved students. It not only revolutionizes scholarship access in the Philippines but also creates a **scalable model** for global use, helping students worldwide navigate their educational paths.

Its financial sustainability lies in offering premium tools and **eventually** integrating job-hunting features, extending the user's engagement beyond scholarships.

The impact is profound: enabling students to access life-changing scholarships, fostering educational equity, and equipping a new generation of global leaders.

High-level Concept

LinkedIn + Kumon for Scholarships.

It's a professional network connecting students with opportunities (LinkedIn), combined with personalized support and practice to help them succeed (Kumon)

Competitive Advantage

First-mover Advantage. Padayon Ko is the first platform in the Philippines offering this comprehensive, AI-powered solution.

Designed specifically for Filipino students by a Filipino, addressing local challenges and language support.

Access to cutting-edge AI and cloud infrastructure.

Channels

Partnering with teacher influencers.

Leverage successful scholarship recipients to share their experiences and inspire other students.

Targeted campaigns on platforms popular among Filipino high school students.

Presentations and demos at high schools to introduce students & administrators.

Collaborating with local organizations serving Filipino youth.

Customer Segments

High School Students (B2C)

Schools (B2B) seeking to be positioned as leaders

Department of Education for High School Students & Commission of Higher Education for College Programs (B2G)

Parents actively involved in their children's education

Early Adopters

Tech-savvy teachers and school admins

Driven, ambitious students

Students from underserved communities

Cost structure

Cloud Computing. Expenses for servers, databases, and APIs (Cloud Run, Cloud Functions, Notion API, Gemini API, etc.).

Salaries for Team expansion → marketing, maintenance of scholarship DB, and development.

Developing and updating educational resources, practice materials, and onboarding content.

Costs associated with social media campaigns, influencer partnerships, and school outreach.

Revenue streams

B2B School Subscriptions (SaaS) Tiered pricing based on student limits and features.

Freemium Model for Students. Core features free, premium features paid.

Government Contracts; Partnerships with the Department of Education and CHED.

University Partnerships. Collaborations for student recruitment and support.

Opportunities

How different is it from any of the other existing ideas? How will it be able to solve the problem?

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(Parreño, 2023)

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Opportunities

USP of the
proposed solution

Unique Selling Point

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List of features offered by the solution.

Highly recommended to [view the video](#) to see the features in action

1. **Multilingual Onboarding:** Navigate the platform effortlessly in **English, Tagalog, or Cebuano**, ensuring accessibility for all Filipino students.
2. **AI-Powered Scholarship Matching:** Enter your details, and let the AI match you with **scholarships tailored to your unique profile**—no more endless searching.
3. **Automated Posting of New Scholarships on Platform and Facebook:** Stay updated with **the latest opportunities**. Sharing opportunities on **Facebook**, increasing chances of going viral and helping more students.
4. **Personalized Essay Generator:** Write **powerful, personalized essays** with AI assistance, ensuring your application stands out to reviewers.
5. **Achievement Tracker:** Organize and present your achievements, complete with **photos, videos, references, and key details**, to boost your application's credibility.
6. **MathyYou (Math Tutor):** Learn and master **SAT math concepts** through interactive, personalized practice sessions tailored to your needs.
7. **Fluent (English Practice Bot):** Practice and improve your English fluency and communication skills with an AI bot designed to mimic real-life conversations.
8. **Super Essays:** Seamlessly combine your **achievements and foundational essays** to craft application responses that are both compelling and tailored to specific prompts.

Process flow diagram or Use-case diagram

Notion → FB Post



Notions Extracts Scholarship Information

DB Item's properties, child blocks, and cover image.



Gemini Writes FB Post Caption

Raw profile rewritten to keywords



Facebook Posts Image + Caption

Caption is concise & directs users to URL

Profile → User Bio



Notion Extracts Raw User Profile

User Input via Form



Gemini Writes User Bio

Rewrite w/ best practices



Notion Adds Bio to `My Profile`

Users can update this later

Process flow diagram or Use-case diagram

Profile → Scholarship Match



Notions Extract Raw User Profile

User Input via Form



Gemini Optimizes Query for Vector Search

Raw profile is rewritten to highlight keywords



Notion Gets Scholarship Info

Parse each Page in Scholarships DB



Gemini Embeddings Matches Profile to Scholarships

Find and sort scholarships according to `optimized_profile`



Notion Displays Matched Scholarships

Top 3 matched scholarships set to *in progress*

Background Process



Padayon Ko via Python Caches Embeddings

Caches summaries in .json for unchanged content.

and



Cloud Function Checks for new scholarships

Every 10 minutes. If no *in progress*, match again.

Process flow diagram or Use-case diagram

Achievement Tracker



User Answers Questions

Build up small answers



Gemini Processes Answers into Achievements

Clean, structure, X-Y-Z resume bullet, and sound human.



Notion Stores Achievements

User pastes output. For use later.

Foundational Essay



User Answers Questions

Narrate thoroughly for richer essays



Gemini Processes Answers into Essays

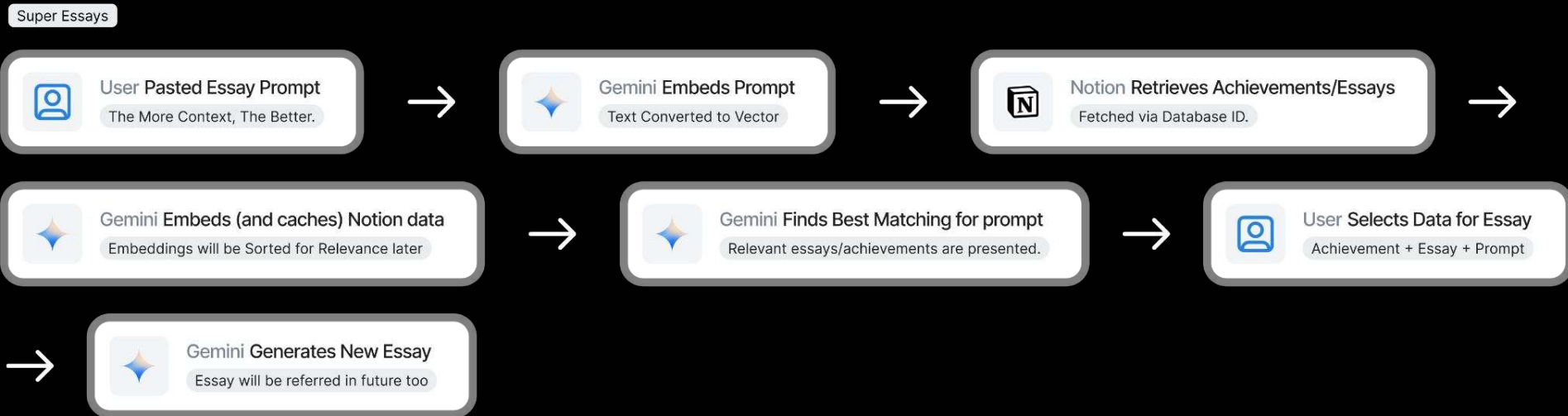
Clean, optimize for purpose, and sound human.



Notion Stores Essays

User pastes output. For use later.

Process flow diagram or Use-case diagram



Process flow diagram or Use-case diagram

Fluent - Verbal Communication



User Talks with Fluent

Chooses *mode* and answers prompt



Chirp (Google) Transcribes User Speech

Text-to-Speech available in English and Filipino.



Gemini API Converses with User

Simulates talking but with focus on *mode*



Synthesize (Google) Text-to-Speech

AI Voice reads the response, "replying" to user

if ended



Gemini Feedbacks User's Performance

Refers to *mode* framework to specify feedback

Process flow diagram or Use-case diagram

MathyYou — Interest-aligned Math Questions



User Gives info to MathyYou

Interest, question (if any), & type of Math



Gemini (Chat) Creates Math Questions & Converses with User

Questions are tailored to interest. Socratic and does not give away answer.

Background Tasks



Cloud Run Hosts WebApp

Enables Notion Embedding



Gemini Verifies Correctness

`code_execution` with Python to check user

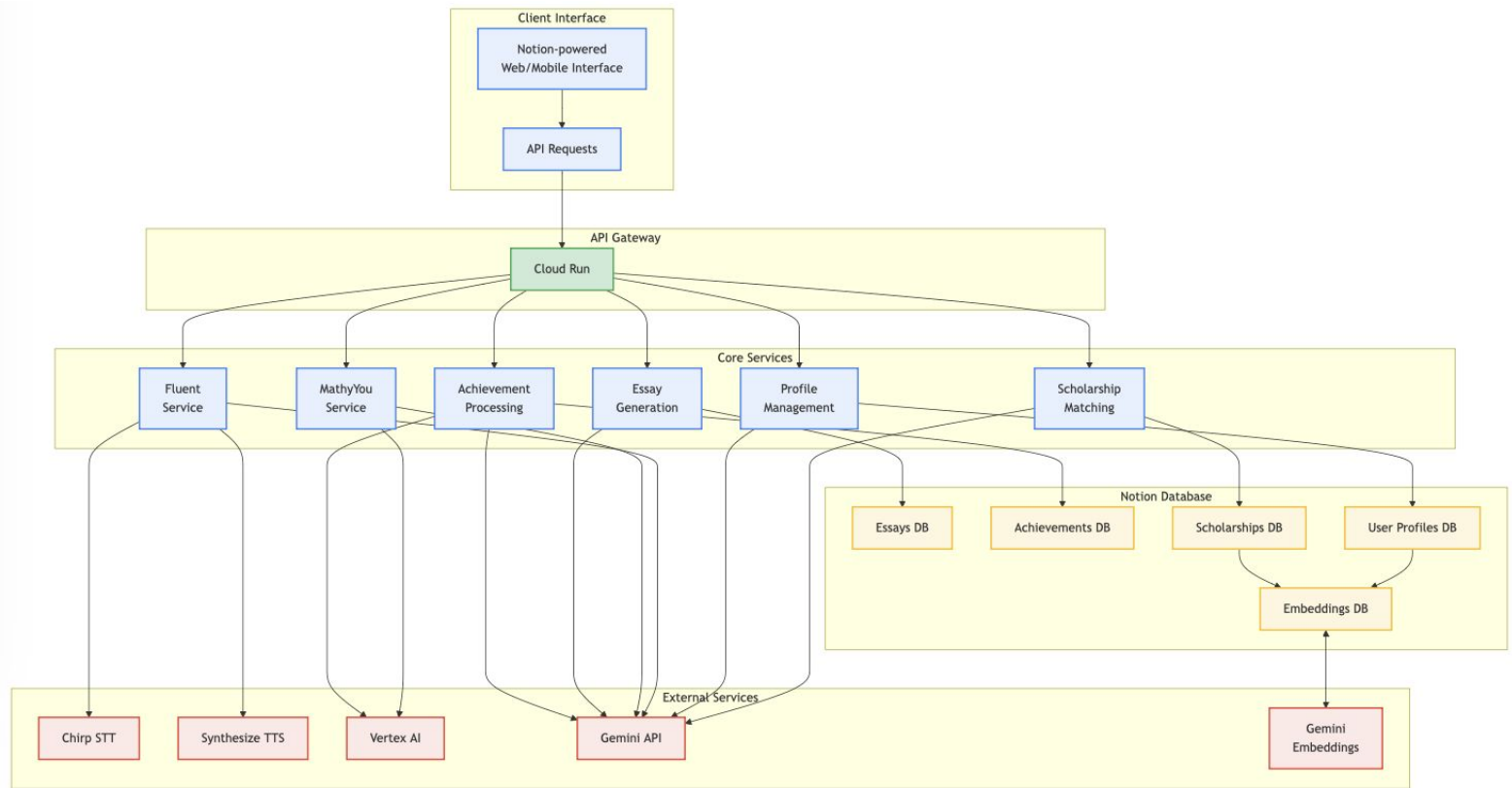
User Can Calculate with Embedded Tools

Calculators, sketchpads, & code cells are present.

Wireframes/Mock diagrams of the proposed solution (optional)



Architecture
diagram of
Padayon Ko



1. AI Powerhouse: The Gemini Suite

- Leveraging **Gemini Pro 1.5** for advanced natural language processing, personalization, and essay generation ensures **high accuracy and contextual understanding** for features like scholarship matching and Fluent.
- The **Gemini embedding model** drives semantic understanding for better achievement tracking and essay synthesis, allowing **deep integration of user data for personalized recommendations**.

2. Seamless Communication: Chirp and Synthesize

- **Chirp** powers real-time speech-to-text for Fluent and essay-drafting features, catering to users who prefer speaking over typing.
- **Synthesize** ensures responses sound human-like, providing users with a conversational, immersive experience for English practice and guidance.

3. Intuitive Database and Integration

3. Notion API

- The **Notion API** is used as both a **database** and **front-facing platform** for Padayon Ko, aligning with user preferences based on customer research. Many students already use Notion for personal organization, so integrating directly into Notion ensures a **familiar and intuitive experience**.
- Students can store achievements, essays, and data directly within their Notion space, streamlining their workflow. This decision also avoids the need to force users into a separate web app, making it a **seamless, user-first solution**.
- For scalability, if transitioning back to a standalone web app becomes necessary, all data can be migrated easily using **Google Cloud Storage**, ensuring **future-proof flexibility**.

4. Scalable Backend: Cloud Run and Google Cloud Storage

- **Cloud Run** provides a serverless, scalable backend to handle traffic surges efficiently, particularly during high-stress application seasons.

5. Clean and Responsive Frontend: Flask and Tailwind CSS

- **Flask** enables lightweight, embeddable designs that integrate seamlessly with Notion or other platforms, while also providing flexibility for future web app expansion.
- **Tailwind CSS** creates a **modern, responsive, and accessible UI** to deliver a simple yet effective design for all users.

Use case of Vertex/Gemma/Gemini or any of the Google Gen AI tools used

- **Personalized Scholarship Matching:** Gemini Pro processes student profiles (text data describing background, achievements, and aspirations) and scholarship descriptions to generate semantic embeddings. By comparing these embeddings, Gemini identifies the most relevant scholarship opportunities for each student, saving them time and effort.
- **AI-Powered Essay Generation:** Gemini Pro generates personalized essay drafts based on student-provided information and common scholarship application questions. It also powers the "Super Essay" feature, which merges pre-written essays and achievement data to create tailored responses to new essay prompts.
- **MathyYou (Math Tutor Bot):** Gemini Pro generates interest-aligned math questions and provides explanations and hints. It also helps create the personalized scenarios that make learning more engaging.
- **Fluent (English Practice Bot):** Gemini Pro via Chirp and Synthesize Text powers the conversational interactions with Fluent, providing responses, feedback, and guidance based on the selected conversation mode. It also helps structure the conversations according to specific learning frameworks.

Estimated
implementat
ion cost
(optional)

Carl Kho

Revenue Model and Projections

Hack2Skill x Google – AI for Impact

Operating Costs Overview

Cloud Computing

Expenses for cloud services.

Team Salaries

Marketing, Devs, Maintenance

Content Creation

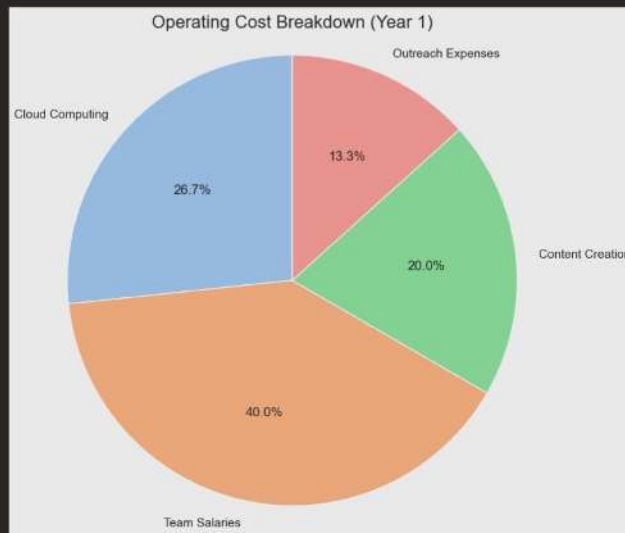
Costs associated with
producing educational content

Outreach Expenses

Marketing and outreach
initiatives to attract users.

Year 1

Estimated at ₱15M (\$270,000).



Check out the scholarship opportunities that match your profile based on your academic goals, achievements, and personal interests.

Matched Scholarships

```

1 #!/usr/bin/env python3
2 """
3 A script to generate a random prompt for a language model.
4 """
5 import random
6 import string
7
8 def generate_prompt():
9     """
10     Generate a random prompt.
11     """
12     # Generate a random number of words (between 10 and 20)
13     num_words = random.randint(10, 20)
14
15     # Generate a list of random words
16     words = []
17     for _ in range(num_words):
18         word = ''.join(random.choice(string.ascii_letters) for _ in range(5))
19         words.append(word)
20
21     # Join the words into a single string
22     prompt = ' '.join(words)
23
24     return prompt
25
26 if __name__ == '__main__':
27     prompt = generate_prompt()
28     print(prompt)
  
```

with

Fluent by Padayon Ko

Let's start with: if you could solve one global problem, what would it be and how would you approach it?

3d Randomize Prompt

Made with love AI by Carl Kho 2024

Conversation Feedback:

While it's clear you feel strongly about education, you struggled to articulate your argument effectively in this conversation. There's a good starting point in emphasizing the importance of "more brains" for problem solving. However, you could significantly improve by providing concrete examples. How would a better-educated population specifically address climate change? What programs could be implemented? What kind of timeframe are we talking about for these solutions to make a difference? Remember, strong arguments are supported by evidence and a clear explanation of their impact. Don't shy away from tough questions - earning top counterpoints will only make your reasoning stronger!

Debate Storytelling Q&A Explain

Guidelines for Debate:

1. Use the SECI template to structure your response.
2. State your position clearly.
3. Explain your reasoning.
4. Provide an example or evidence.
5. Describe the impact or importance of your argument.

Start with: 'My position on this topic is...'

Search for a topic on this website, or ask me to generate a random topic for you.

why don't you give me your opinions and perspectives

I'm here to help you sharpen "your" arguments. Giving you my perspective won't achieve that, will it? Tell me what: give me your strongest point about why education funding should be prioritized, and I'll push back on it. That way, you'll be prepared for any counter-argument. What do you say?

Record

00:00

After your conversation,

Generate Essay

Generate Essay

Use the generated essay as a starting point to develop your own unique perspective on the topic.

foundational essays and achievements

Prototype Performance

Foundational Essay

Tell Us About You:

Mean Response Time: 36.54 ms

Standard Deviation: 4.57 ms

Range: 28.72 - 43.86 ms

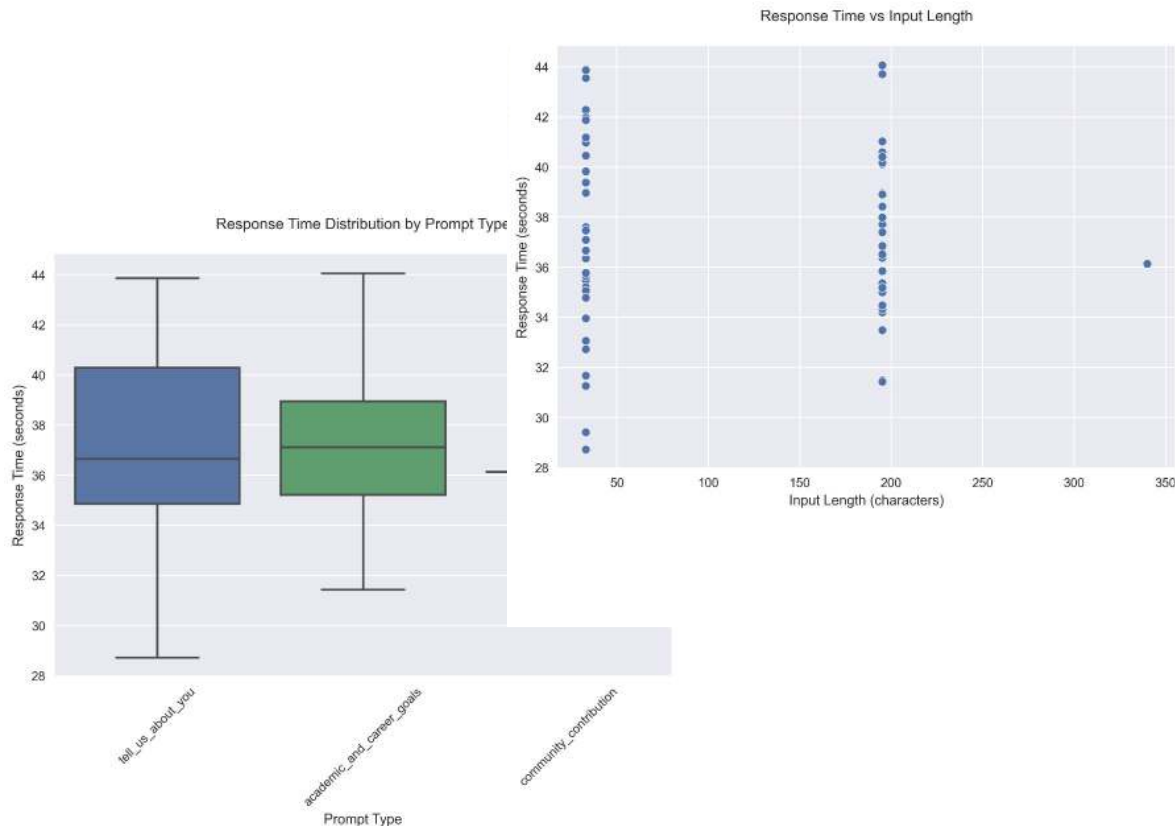
Academic and Career Goals

(and the rest - same algo):

Mean Response Time: 37.48 ms

Standard Deviation: 3.51 ms

Range: 31.43 - 44.06 ms



Prototype Performance

Foundational Essays

Tell Us About You:

Mean Response Time: 36.54 ms

Standard Deviation: 4.57 ms

Range: 28.72 - 43.86 ms

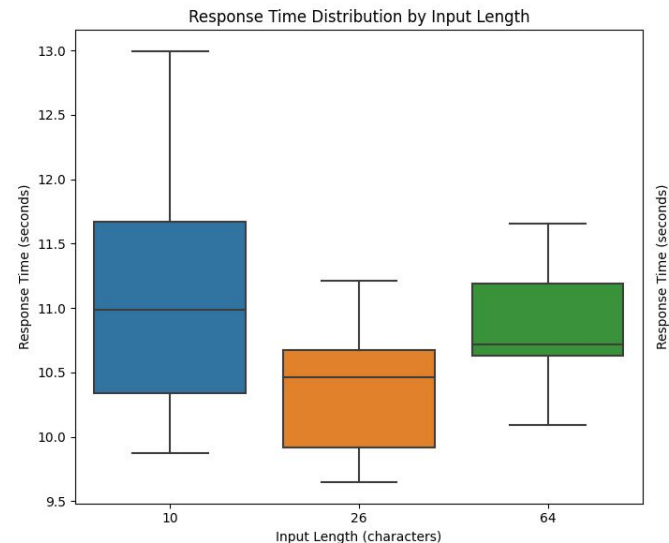
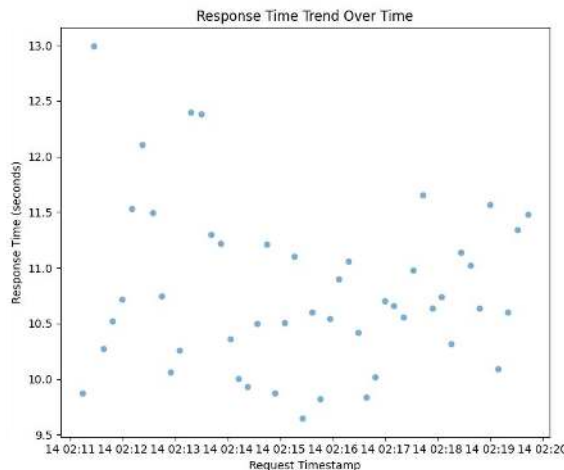
Academic and Career Goals

(and the rest - same algo):

Mean Response Time: 37.48 ms

Standard Deviation: 3.51 ms

Range: 31.43 - 44.06 ms



Prototype Performance

MathyYou

Initial Endpoint:

Mean Response Time: 5.337 ms

Standard Deviation: 9.702 ms

Range: 1.152 - 53.587 ms

Start_Chat Endpoint:

Mean Response Time: 2850.356 ms

Standard Deviation: 436.719 ms

Range: 1967.364 - 4298.509 ms

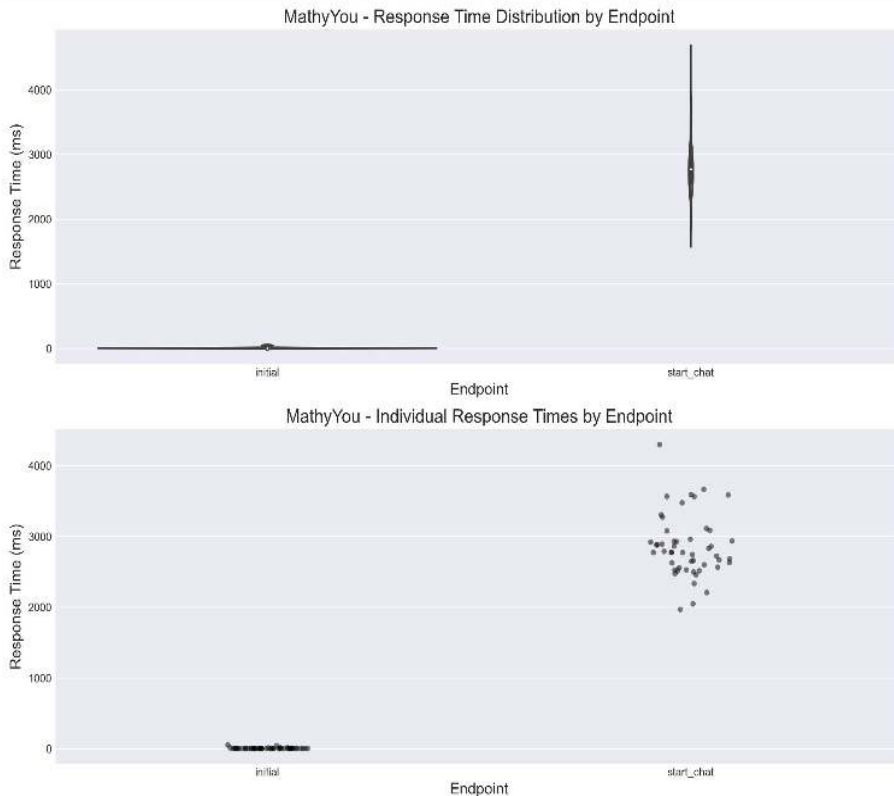


Figure 1. Response time distributions and individual response times for API endpoints. The plots show median, quartiles, probability density, and individual data points.

Prototype

Performance

Fluent

Debate Mode:

Mean Response Time: 0.0265 seconds

Standard Deviation: 0.0328 seconds

Range: 0.0050 - 0.0855 seconds

Storytelling Mode:

Mean Response Time: 0.0098 seconds

Standard Deviation: 0.0023 seconds

Range: 0.0068 - 0.0121 seconds

QA Mode:

Mean Response Time: 0.0078 seconds

Standard Deviation: 0.0022 seconds

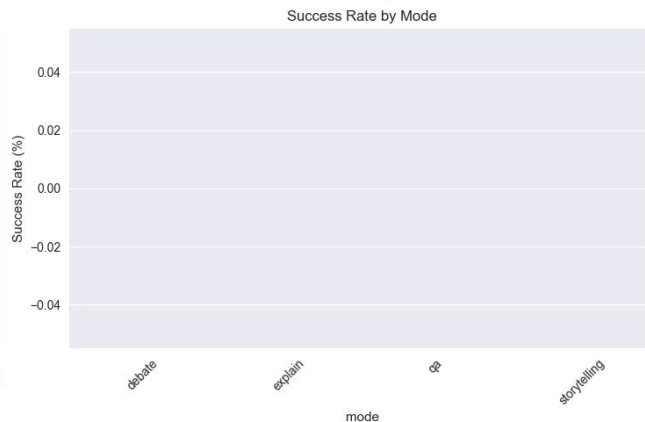
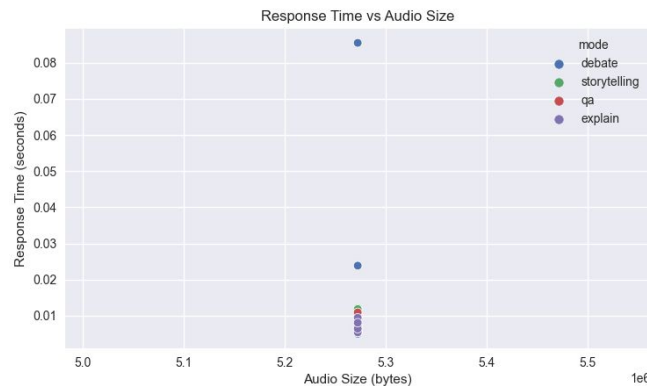
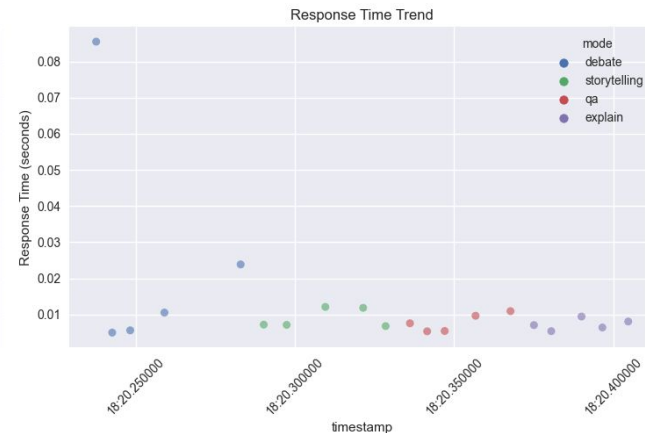
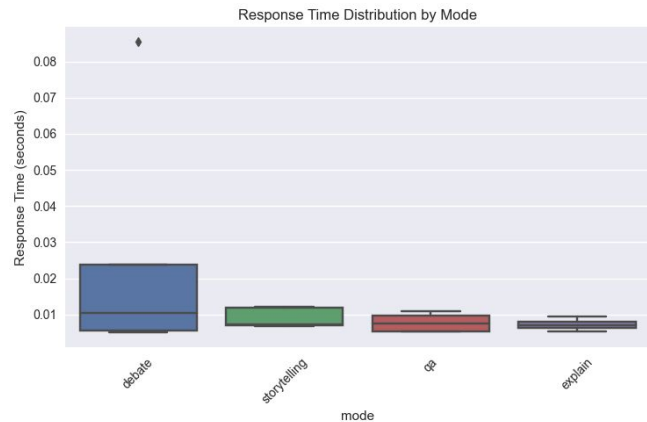
Range: 0.0054 - 0.0109 seconds

Explain Mode:

Mean Response Time: 0.0077 seconds

Standard Deviation: 0.0015 seconds

Range: 0.0054 - 0.0094 seconds



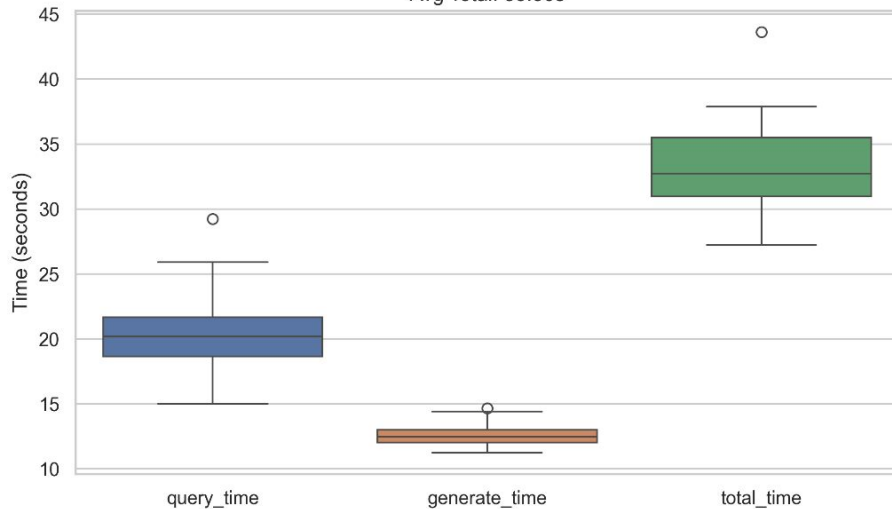
Prototype Performance

Super Essays

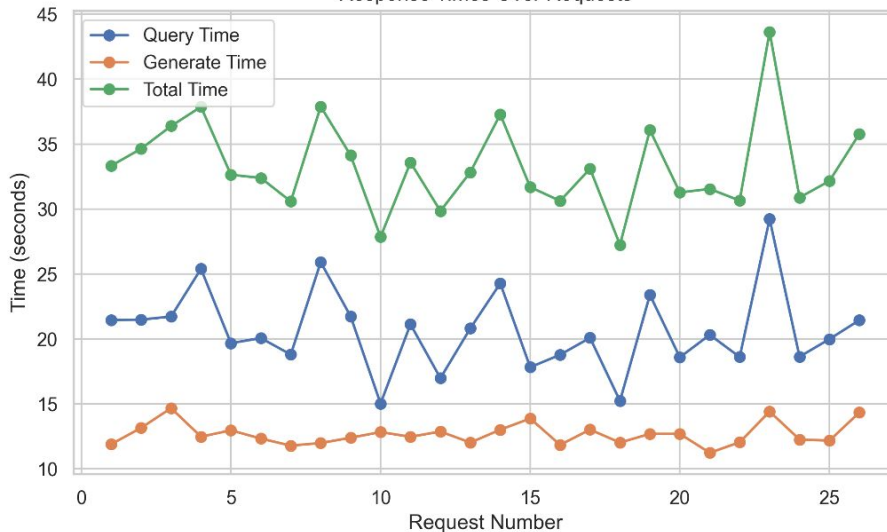
```
Summary Statistics (in seconds):
query_time generate_time total_time
count      26.00      26.00      26.00
mean       20.63      12.67      33.30
std        3.18       0.86       3.52
min        15.02      11.23      27.24
25%        18.67      12.02      30.98
50%        20.20      12.47      32.73
75%        21.66      13.00      35.50
max        29.23      14.67      43.64

Average Timings:
Query Time:   20.63s
Generate Time: 12.67s
Total Time:   33.30s
```

Response Time Distribution
Avg Total: 33.30s



Response Times Over Requests



Additional Details/Future Development (if any)

1. Introducing a Video Interview Module

- **Leveraging Gemini 2.0:** With support for video and multimodal processing, Padayon Ko can integrate a **video interview preparation module** to help students prepare for real-world interview scenarios.
- **How It Works:**
 - **Behavioral Question Practice:** Students can record answers to common questions asynchronously, much like **HireVue**, and receive feedback on clarity, tone, and professionalism.
 - **AI Insights:** Provide **AI-driven analysis** of responses, highlighting areas for improvement in structure, delivery, and alignment with the role's requirements.
- **Impact:** Helps students build confidence and develop polished communication skills, increasing their success rate in interviews.

Additional Details/Future Development (if any)

2. Sister Company: Job Application Platform

- **Vision:** Extend Padayon Ko's success into job applications, creating a **context-aware job platform** for students as they transition into their careers.
- **Unique Selling Points:**
 - **Integrated Profiles:** Students' Padayon Ko data (essays, achievements, and preferences) automatically transitions into the job platform, ensuring a seamless experience.
 - **Auto-Apply Features:** AI uses stored preferences to **suggest and apply** to roles that align with the user's career interests.
 - **Super Application Tools:** Similar to **Super Essays**, the platform can generate **tailored cover letters, resumes, and applications** for job postings.
- **Why This Matters:** Unlike traditional job platforms, this solution **starts with the student's journey in Padayon Ko**, creating a career trajectory tied to their growth and achievements.

Additional Details/Future Development (if any)

3. Future Expansion

- **Global Scaling:** Expand the scholarship database and job platform to international audiences while maintaining cultural and educational relevance.
- **Enhanced AI Modules:** Continuously improve recommendation algorithms, adding **real-time mentorship tools** for career guidance.
- **Gamification:** Introduce gamified elements to keep students engaged, like career badges for milestones or scholarships.

GitHub & Demo video URL



<https://github.com/CarlKho-Minerva/padayon-ko>

One **scholarship** win could be the start of something bigger.

AI for Impact

APAC Hackathon 2024

A social-first initiative



THANK YOU