Executive Summary: What you're building and why (2-3 paragraphs)

The project aims to build an AI-powered platform that transforms scientific and medical research into concise, visually engaging, and easily understandable short-form videos. The problem it addresses is the growing gap between scientific discovery and public understanding, in an age of misinformation, even accurate research often fails to reach or resonate with non-expert audiences. By using automation and intelligent summarization, the platform helps bridge this gap, ensuring that credible information can be communicated effectively and at scale.

This solution targets both the supply side (researchers, institutions, journals struggling with science communication) and the demand side (general audiences and healthcare professionals seeking credible, digestible summaries). The long-term vision is to make evidence-based knowledge as accessible and shareable as viral content, combining the rigor of academia with the reach of social media.

User Research: Personas, user journeys, problem validation

Persona 1 – Sofia (Graduate Researcher)

· Age 25, Master's student in Biology

· Goal: Present complex research papers in simple, visual formats for class presentations

· Pain Points: Papers are dense, visuals are hard to create manually

User Journey

1. Discovery – Finds the platform via a classmate's shared AI video summary

2. Signup – Creates an account using university email for credibility

3. Upload – Submits a 20-page PDF paper in PDF format

4. Processing – Waits while the app summarizes the paper and generates a short animated video

5. Outcome – Downloads the final video, includes it in her presentation, and shares it with peers

Persona 2 – Dr. Malik (Professor & Conference Speaker)

· Age 47, Associate Professor in Computer Science

· Goal: Use AI videos to communicate published research at conferences and online

· Pain Points: Limited time to create media-ready summaries, wants professional visuals

User Journey

1. Discovery – Learns about the tool from LinkedIn research outreach

2. Signup & Upload – Logs in, uploads multiple recent publications for conversion

3. Customization – Selects tone (academic or layman), video duration, and voice type

4. Processing – Web App job runs video generation

5. Outcome – Downloads high-quality videos, uses them during talks and uploads them on YouTube

Persona 3 – Emma (Science Communicator / YouTuber)

· Age 31, runs a YouTube channel simplifying new academic findings

· Goal: Quickly turn papers into short, engaging educational videos

· Pain Points: Reading and summarizing papers takes too long; needs scalable automation

User Journey

1. Discovery – Finds the site through Google search for "AI video summarizer for papers"

2. Signup – Uses Google login for speed

3. Upload & Selection – Uploads PDFs or arXiv links, chooses "public mode" to let videos be searchable

4. Processing – Monitors generation progress from dashboard and edits text if needed

5. Outcome – Publishes AI videos directly to her channel with automatic citations included

Product Vision: MVP scope, key features, success metrics

MVP Scope

- Core feature: Automated summarization and script generation from research papers.

- Simple user interface for uploading content and generating draft video scripts.

- Creating a que system for the video to show its lineup and loading production.

Key Features

- AI-driven text summarization tailored for medical/scientific literature.

- Style adaptation for different audiences (e.g., clinicians vs. public).

- Review interface for user edits and fact-checking.

- Integration for citation and source tracking.

Wireframes: Link to or embed your mockups (skel)

https://github.com/Kenza-R/Hidden-hill/blob/main/docs/Mockup.png

Technical Architecture: Framework, database, deployment decisions

1. Backend Framework: Django with Django REST Framework for user authentication, file uploads, and serving APIs between the frontend and AI translation pipeline

2. Database: PostgreSQL on Railway to store user data, uploaded paper metadata, and video generation progress

3. Deployment Platform: Railway for hosting both the web app and background worker with automatic GitHub integration and low maintenance cost

4. Third-Party Services: Cloudflare R2 for affordable storage of PDFs and videos, OpenAI API for summarization and script creation, and Google Cloud Video Intelligence & Text-to-Speech APIs for generating and assembling the AI videos

5. Development Workflow: GitHub for version control, GitHub Projects for backlog tracking, and GitHub Actions for simple CI and code review before merge

Product Backlog Summary: Link to GitHub Project, story count, total story points

Feature	User Story	Stroy Point
User Authentication & Profiles	As a user, I can sign up and log in securely so I can manage my projects.	8
Research Ingestion	As a user, I can upload a PDF or provide a URL so that the system can extract key sections.	12
Summarization Pipeline	As a user, I can generate a short script summary of my research using AI.	20
Editing & Review Interface	As a user, I can edit and refine the generated script before exporting.	16

Storyboard Generation	As a user, I can convert the final script into a structured storyboard.	12
Rendering Preparation	As a user, I can preview visual scenes and captions before final export.	10
Analytics Dashboard	As a user, I can view insights such as time saved, total outputs, and engagement metrics.	8
Admin & System Monitoring	As an admin, I can monitor usage, storage, and task queue performance.	8

Sprint 2 Plan: Sprint goal, committed stories, team capacity

Sprint Goal: To implement and test the end-to-end summarization workflow allowing users to upload a research article, generate an AI-based summary, and review/edit the generated script through the web interface. This sprint aims to move from isolated components (upload + summarization) toward a cohesive, working MVP that demonstrates the project's core value: transforming complex research into accessible, digestible summaries.

Sprint Focus:

- Integrate backend and frontend through working APIs

- Test summarization performance and accuracy

- Establish logging and monitoring for Celery tasks

- Conduct first user demo of the upload → summarize → edit flow

Team Organization: Link to team charter, roles, meeting schedule

https://github.com/Kenza-R/Hidden-hill/blob/main/docs/team-charter.md

Process Setup: Link to GitHub Project, Definition of Done/Ready

https://github.com/Kenza-R/Hidden-hill/blob/main/docs/definition-of-done.md

https://github.com/Kenza-R/Hidden-hill/blob/main/docs/definition-of-ready.md