

# TEAM LECTURE AI

Finalists in VIP@SOC  
for 2 semesters!



## Ishan Agarwal – Backend Infrastructure

- Software development experience in HR tech & education platforms, optimizing system performance and user workflows.
- Currently interning at **TechFour Solutions as a SWE intern**, ensuring smooth building of LectureAI as a cloud solution.

## Arshin Sikka – AI & System Development

- Researching **LLMs for cybersecurity**, applying AI-driven text processing techniques to real-world data.
- Experience in backend & AI integration, currently interning in the **Generative AI Department at KPMG**.

## Vidushi Jaidka – Data & AI Summarization

- **Researching AI applications in econometrics**, analyzing the impact of EV rollout using data-driven models.
- Interning at **EY in Tech Consulting**; experienced in large-scale data analysis and predictive modeling using SQL, Python, and R to drive real-world insights.

## TEAM COLLABORATION

Our team operates with a complementary skill set, ensuring seamless execution—Arshin drives AI model development and research, Ishan focuses on backend integration and system architecture, and Vidushi optimizes data pipelines and AI-powered summarization. By combining our technical capabilities with real student insights, we are developing a solution that is practical, effective, and directly addresses academic challenges.

## MISSING PIECES

While we have core strengths in AI, backend, and data science, we seek mentorship from AI/NLP experts and experienced founders. BLOCK71's incubation support, global network, and collaborative spaces can help us refine our models, validate our product, navigate compliance, and scale to new markets.



# LectureAI

## Never Miss a Word

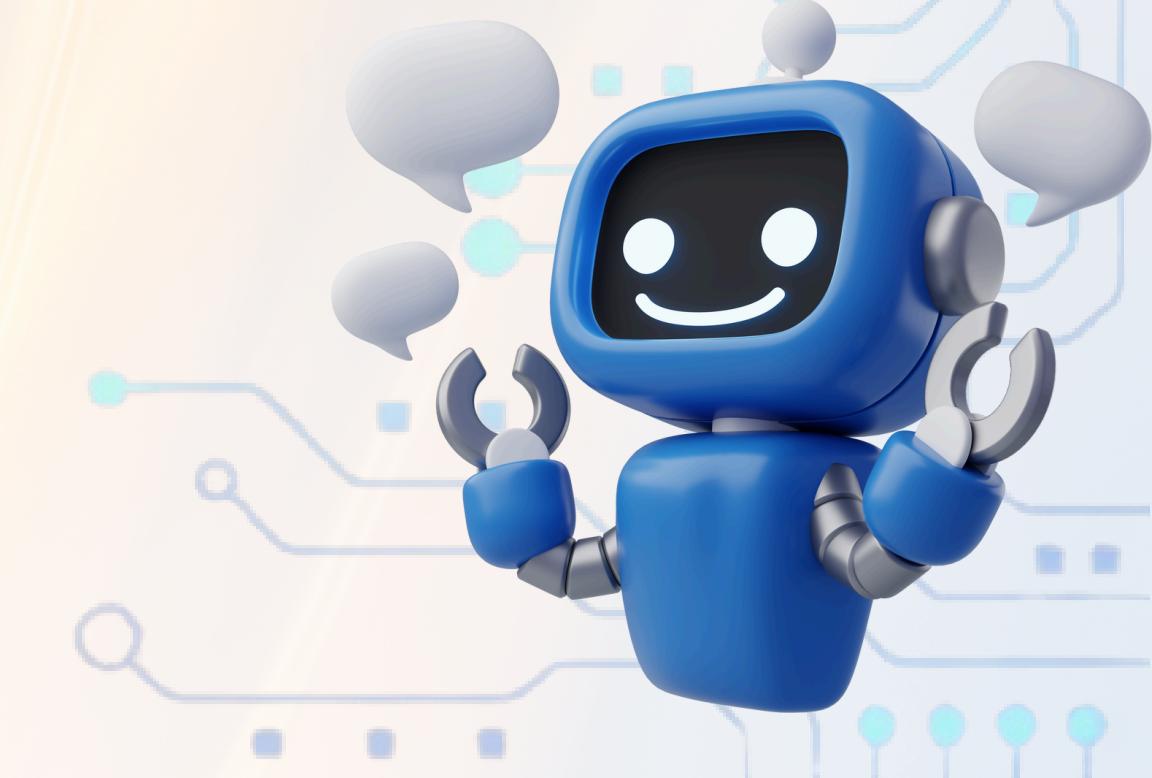
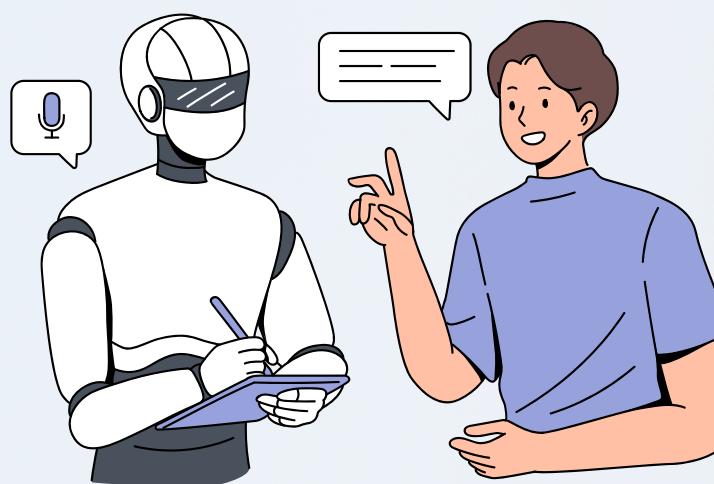
A cloud-powered **AI** transcription and **summarization** platform for  
**University lectures**, delivering **accurate structured notes**, and efficient  
**revision tools** for students.

# TRANSFORMING THE LECTURE EXPERIENCE

Imagine lectures where note-taking is **automated**, and every detail is accessible—making learning **seamless** and efficient. Let's take you on a journey to see how **Lecture AI transforms** lecture recordings into clear, structured, and **actionable learning tools**—empowering students to learn and revise effortlessly.



[Link to demo!](#)



# THE TECH BEHIND LECTURE AI

## KEY TECHNICAL INNOVATION



### Audio Retrieval & Cloud Processing

Zoom Webhooks trigger LectureAI to fetch the MP3/M4A file via the **Zoom Cloud Recording API**, storing it on **AWS S3 / Google Cloud Storage** for processing.

### AI-Powered Speech-to-Text Transcription

**Whisper AI / Google Speech-to-Text API** transcribes audio with high accuracy, while **SpaCy + NLTK** enhance punctuation and sentence structuring.

### Document Generation & Formatting

**Python-docx / ReportLab** generate structured **Word documents** with summaries, key points, definitions, and a **bilingual toggle** for accessibility.

### Seamless Access & Student Impact

The final document is **automatically generated** and **emailed** to the lecturer, who can then **upload it to Canvas**, enabling easy revision without rewatching lectures

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Fine-tuned on academic data to handle Singlish, technical terms, and real classroom conditions.

### Intelligent Topic Segmentation & Structuring

**BERT / Longformer / GPT-based models** segment lecture content into topics, while **Named Entity Recognition (NER)** identifies key terms and concepts.

### AI Summarization, Key Concept Extraction & Follow-Up Activities

**GPT-4 Turbo / BART** generate structured summaries, **extracting key takeaways**, formulas, and definitions while **identifying assignments, deadlines**, and announcements.

### Mandarin Translation & Accessibility

DeepL API / Google Translate API **translates transcripts & summaries**; Custom Translation Glossary ensures accuracy.

# MARKET OPPORTUNITY & ADDRESSABLE MARKET

## Primary Market

35,000+ NUS students who rely on Panopto lecture recordings.

Other Singaporean universities (NTU, SMU, SIT, SUSS, etc.) with a total student population of over 50,000.



## Scalability & Expansion

ASEAN Universities (Malaysia, Indonesia, Thailand) with over 2 million students facing similar accessibility issues with lecture recordings & multilingual needs.

EdTech & MOOC Platforms (Coursera, Udemy, edX) where AI-powered lecture transcription & summaries can be applied at scale.

■ THE GLOBAL AI IN EDUCATION MARKET IS PROJECTED TO REACH \$20 BILLION BY 2027, DRIVEN BY INCREASING DEMAND FOR AI-ENHANCED LEARNING SOLUTIONS (SOURCE: HOLONIQ, 2023).

■ OVER 60% OF STUDENTS GLOBALLY NOW USE AI-POWERED TOOLS TO ASSIST WITH ACADEMIC WORK, SHOWING A SHIFT TOWARDS AUTOMATION IN EDUCATION (SOURCE: MCGRAW-HILL AI IN EDUCATION REPORT, 2023).

■ 82% OF NUS STUDENTS STRUGGLE WITH PANOPTO TRANSCRIPTS, CITING INACCURACIES, DIFFICULTY UNDERSTANDING ACCENTS, AND MISSING KEY CONCEPTS.



# COMPETITIVE ANALYSIS

Feature	LectureAI	Zoom Transcriptions	Otter.ai / Generic AI Transcription
Trained for Singlish & Technical Terms	Yes	No	No
Context-Aware Transcription	Yes	Limited – Basic transcription, lacks context	Limited – models PROVIDE context-aware AI but not optimized for lecture CONTENT.
Keyword & Formula Extraction	Yes	No	No
Smart Notes & Summaries	Yes	No	Limited – Some AI models provide summaries, but lack subject-specific depth
Inline Translation Support (Chinese, etc.)	Yes	No	Yes

## Barriers to Entry

**Academic-Specific AI Training**  
Requires specialized AI models fine-tuned for university lectures, Singlish, and technical jargon, which generic AI tools lack.

**High Computational Costs for Scaling**  
LectureAI's AI-driven transcription, topic segmentation, and multilingual summarization demand GPU-intensive cloud processing, making large-scale deployment expensive. Rapid growth like expanding to multiple universities might face barriers.

## Competitive Advantage

LectureAI automates lecture transcription, topic segmentation, and summarization using cloud-based AI, eliminating manual uploads and delays. Unlike generic tools, it is optimized for academic speech, jargon, and multilingual support, ensuring accurate structured notes. Its seamless Zoom Cloud integration and AI-driven workflow also extract action items and deadlines, providing students with ready-to-use, revision-friendly summaries and giving it a distinct edge over competitors.

# VALIDATION



## Real Student Pain Points - Insights from Our Comprehensive NUS Student Survey

74%

want AI-generated summaries  
to cut revision time and  
enhance note-taking.

61%

of Chinese students prefer  
reading in Chinese, but Panopto  
lacks inline translation.

77%

said they often rewatch lectures for  
note-taking, indicating a demand for  
structured AI-powered transcriptions.

## BETA TESTING PLAN

- Month Pilot Program - Testing LectureAI with 100+ NUS students and professors across multiple faculties.
- AI Model Refinement Based on Real Data - Improving transcript accuracy and summarization quality with student feedback loops.
- Faculty & Student Collaboration - Engaging professors, TAs and students to optimize LectureAI for real classroom usage.

## AI-DRIVEN LEARNING IMPACT

-  Studies show that AI-powered study tools improve retention rates by up to 30%, making them a proven advantage for academic success (Source: EdTech AI Research 2023).
-  McGraw-Hill Study 2023: 84% of students believe AI-powered learning tools improve efficiency, reinforcing the need for LectureAI's automated study assistance.

# MILESTONES FOR LECTURE AI

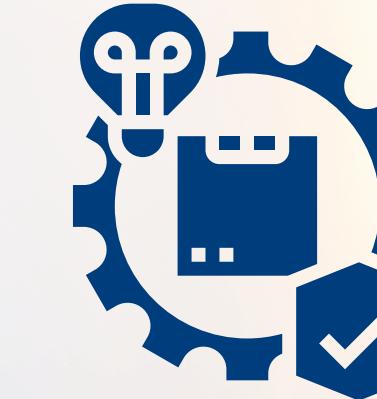


## First 6 months



### AI Model Training and Compute

Fine-tuning transcription and summarization models for academic speech and multilingual support using GPU-powered cloud resources.



### Cloud Integration & Zoom API Development

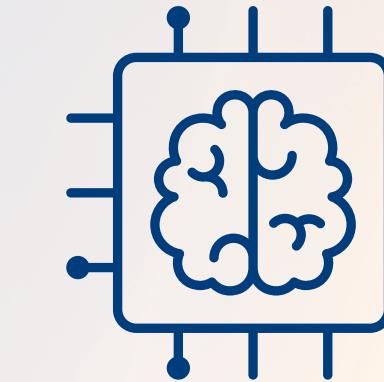
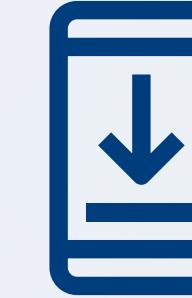
Setting up Zoom Cloud API for automated audio retrieval and secure cloud storage to streamline lecture processing.



### Beta-testing & AI Model Refinement

Conducting pilot testing with NUS students and faculty to refine topic segmentation, summarization accuracy, and translation models.

## Second 6 months



### Digital Outreach & Faculty Onboarding

Student engagement, internal NUS marketing, and faculty onboarding for adoption..

### Feature Enhancements & UX Improvements

Improving structured transcript formats (PDF, Word) and expanding searchable lecture notes.



### SERVER COSTS & AI MODEL HOSTING

Maintaining cloud-based AI processing, secure storage, and optimizing inference speed for scalability.