

Focus Flow

Alona Gatker, Jonathan Shaya, Renan Bazinin
supervised by Dr. Sarel Cohen

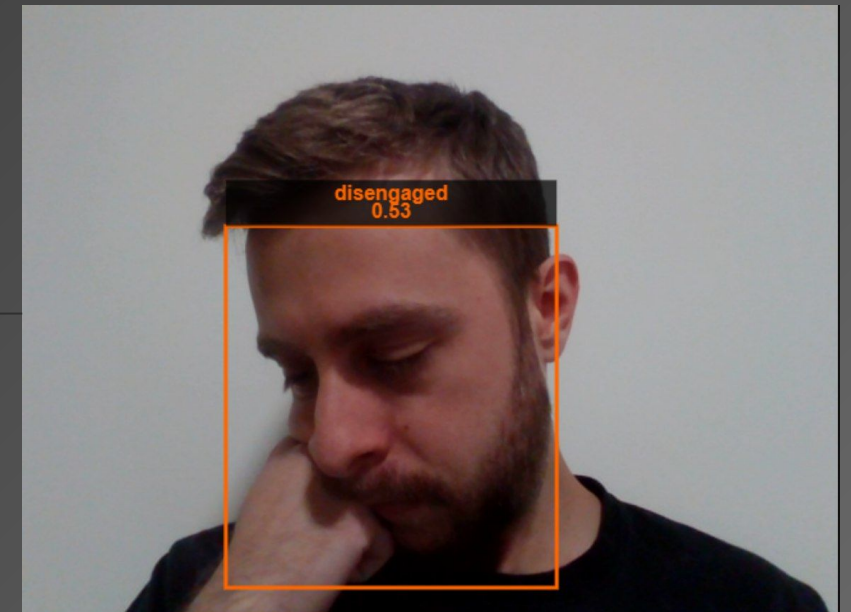
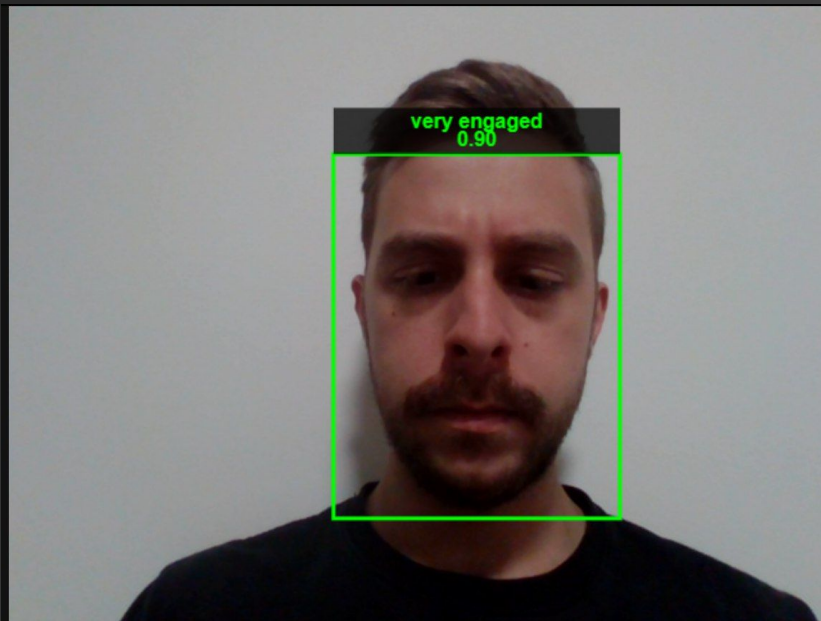
Problem Statement

- **Students lose focus during video lectures**
- **Hard to sustain attention on complex topics**
- **No live engagement in recorded sessions**
- **No real-time feedback on comprehension**

Solution:

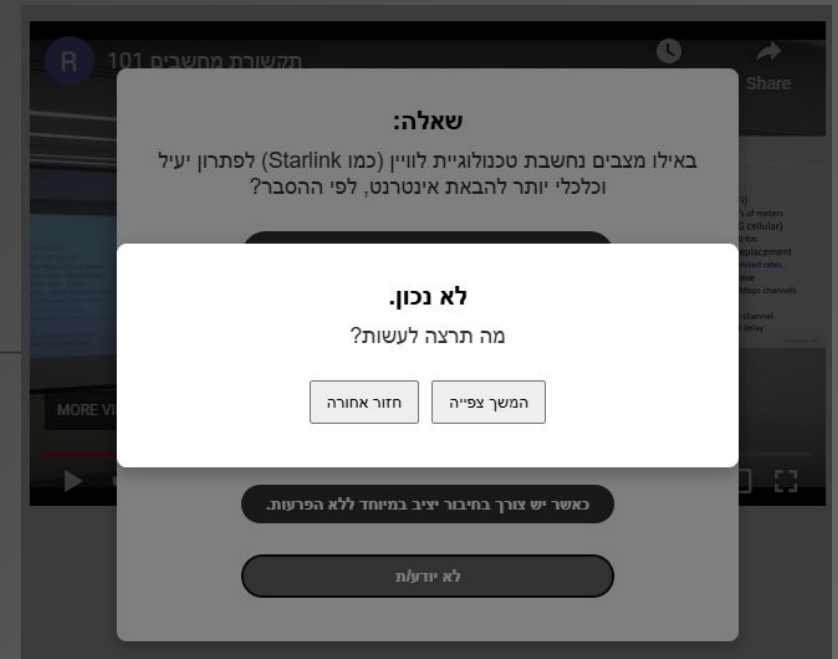
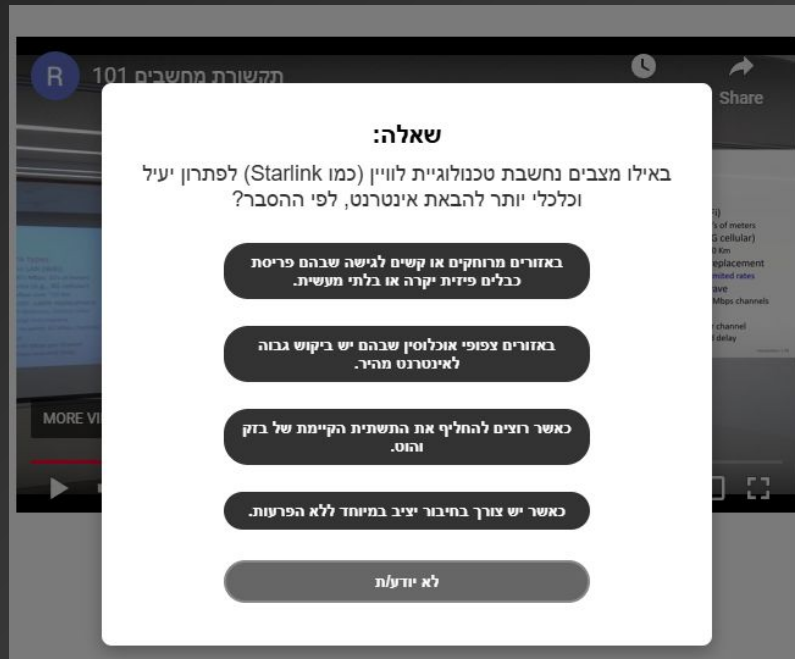
Real-time AI Engagement Monitoring

- Real-time focus detection by our AI
- Instant AI-generated quizzes
- Rewind & reinforce missed content



Solution: AI Intervention

- Real-time focus detection by our AI
- Instant AI-generated quizzes
- Rewind & reinforce missed content



Solution: Summaries

- Never Miss a Moment: Time Stamped Video Highlights in a Flash
- Stay in the Loop: Auto-Scrolling Summaries Lighting Up Every Block

The image shows a YouTube video player interface. The video title is "תקשורת מחשבים 101" (Computer Networks 101). The video content shows a lecturer in a classroom setting. A presentation slide titled "Circuit switching: FDM and TDM" is displayed. The slide includes the text "Frequency Division Multiplexing (FDM)" and "optical, electromagnetic frequencies divided into (narrow) frequency bands". It also features a diagram showing four horizontal frequency bands, labeled "4 users". The video player controls at the bottom show the video is at 1:21:12 of a 2:34:59 duration.

On the right side of the player, there is a "Summaries" sidebar. At the top, it shows a time range "[82:32 - 81:01]" and a title "חלוקת משאבים במיתוג מעגלים". Below this, there is a detailed summary in Hebrew:

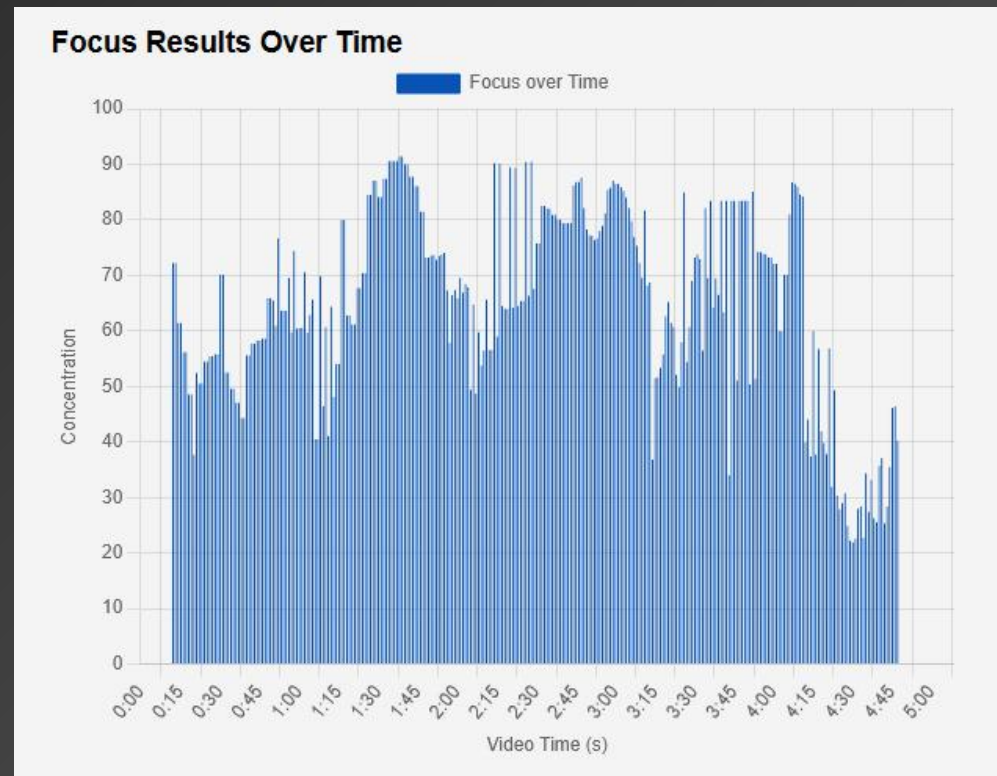
במיתוג מעגלים, משאב התקשורת (הכבל/קו) מחולק למעגלים ייעודיים לכל שיחה באמצעות שתי שיטות עיקריות: *Frequency Division Multiplexing (FDM)* המחלקת את רוחב הפס לתדרי משנה, ו-*Time Division Multiplexing (TDM)* המחלקת את הזמן לחריצי זמן קבועים.

Below this, there is a section titled "Detailed Summaries". It lists two items:

- [82:11 - 81:10] *Frequency Division Multiplexing (FDM)* מחלק את טווח התדרים (רוחב הפס) הקיים על כבל יחיד לתחומי תדרים קטנים יותר, כשכל תדר משמש מעגל (שיחה) נפרד.
- [82:32 - 81:44] *Time Division Multiplexing (TDM)* מחלק את משאב הזמן לחריצי זמן קבועים.

Value to lecturers - improve quality

- **Monitor** focus dips of watchers
- **Refine** pacing on complex topics
- **Analyze** engagement charts assess overall class attention



Live Demo

[To Video](#)

[To Our Site](#)

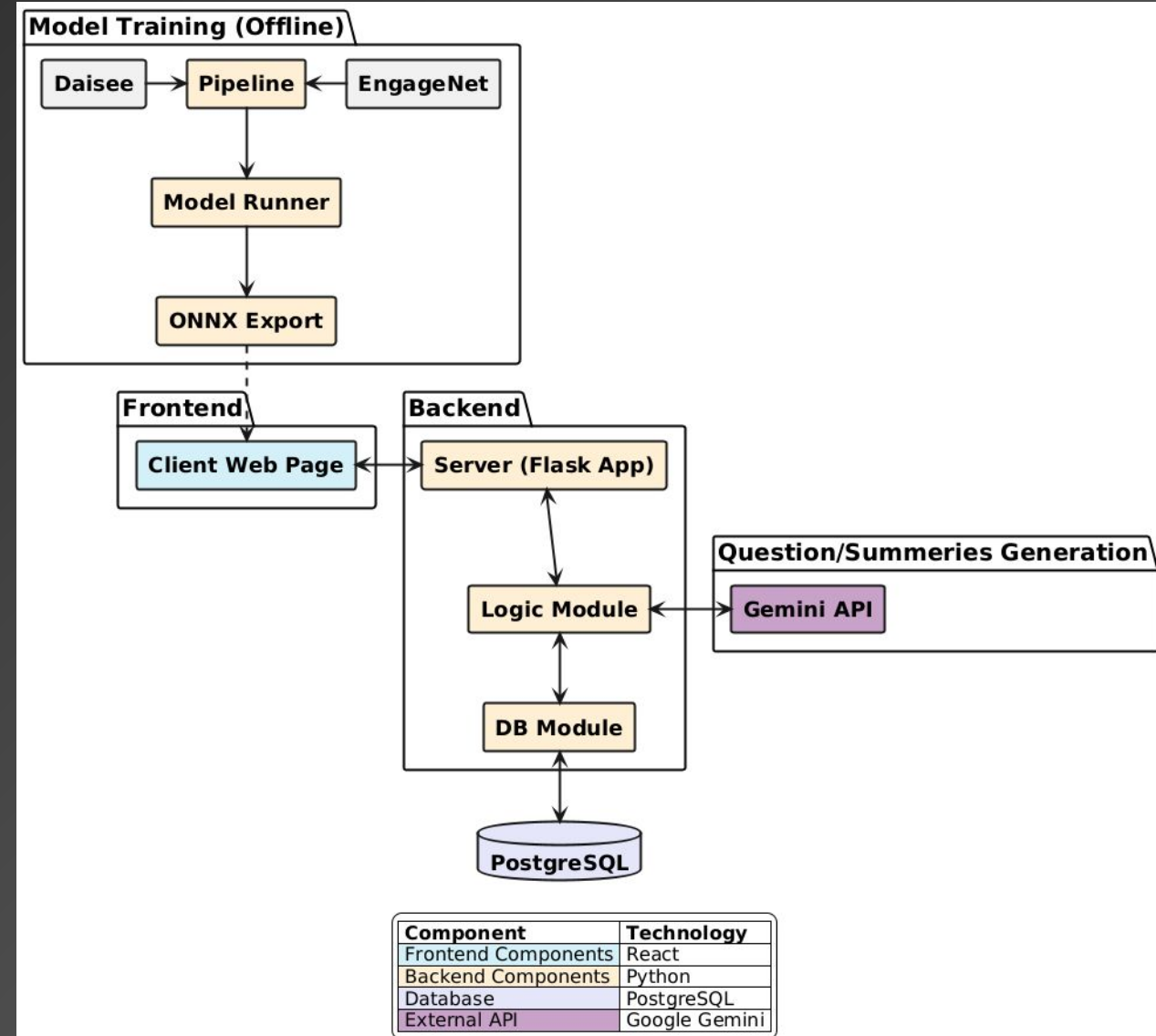




System Architecture



- **React client** captures video & gaze, displays lectures & quizzes
- **Flask API** runs engagement inference & controls quiz flow
- **AI models** trained on the EngageNet and DAiSEE datasets
- **PostgreSQL** stores session and quiz data



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27 May 2025, 21:25 (9 days ago) ☆ 😊 ↶ ⋮

Dear Renan Bazinin, Alona Gatker, Jonatan Shaya

We are delighted to inform you that your contribution has been accepted for presentation at the Interactive Events Track of the AIED 2025 conference.

The Interactive Events Track aims to provide a dynamic platform for showcasing innovations at the crossroads of education, interactive systems, and AI. We believe your work will significantly contribute to this goal, offering fellow researchers, practitioners, and industry professionals an engaging look into systems and demos that address diverse educational challenges.

Please bring your own computer, laptop, smartphone, or other device(s) for the demonstration, while ensuring you have the appropriate power adapters compatible with Italian power outlets.

We look forward to you showcasing your system live during the Interactive Events sessions.

Emmanuel G. Blanchard, Leonardo B. Marques
AIED2025 Interactive Events Co-Chairs.

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Questions ?

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[Diagrams](#)