



IEEE CTSOC Bangalore Chapter – Student Initiatives – 2026-27

TECHNICAL SESSION - 2026-27



1. EPUB PROVIDER SERVICE

PROJECT BRIEF

Aim

Create end-end web-app, for converting scanned book image (South)Indian languages to EPUB format

What you will learn

Conversion challenges in Indian languages in AI models

Python AI model API flows,

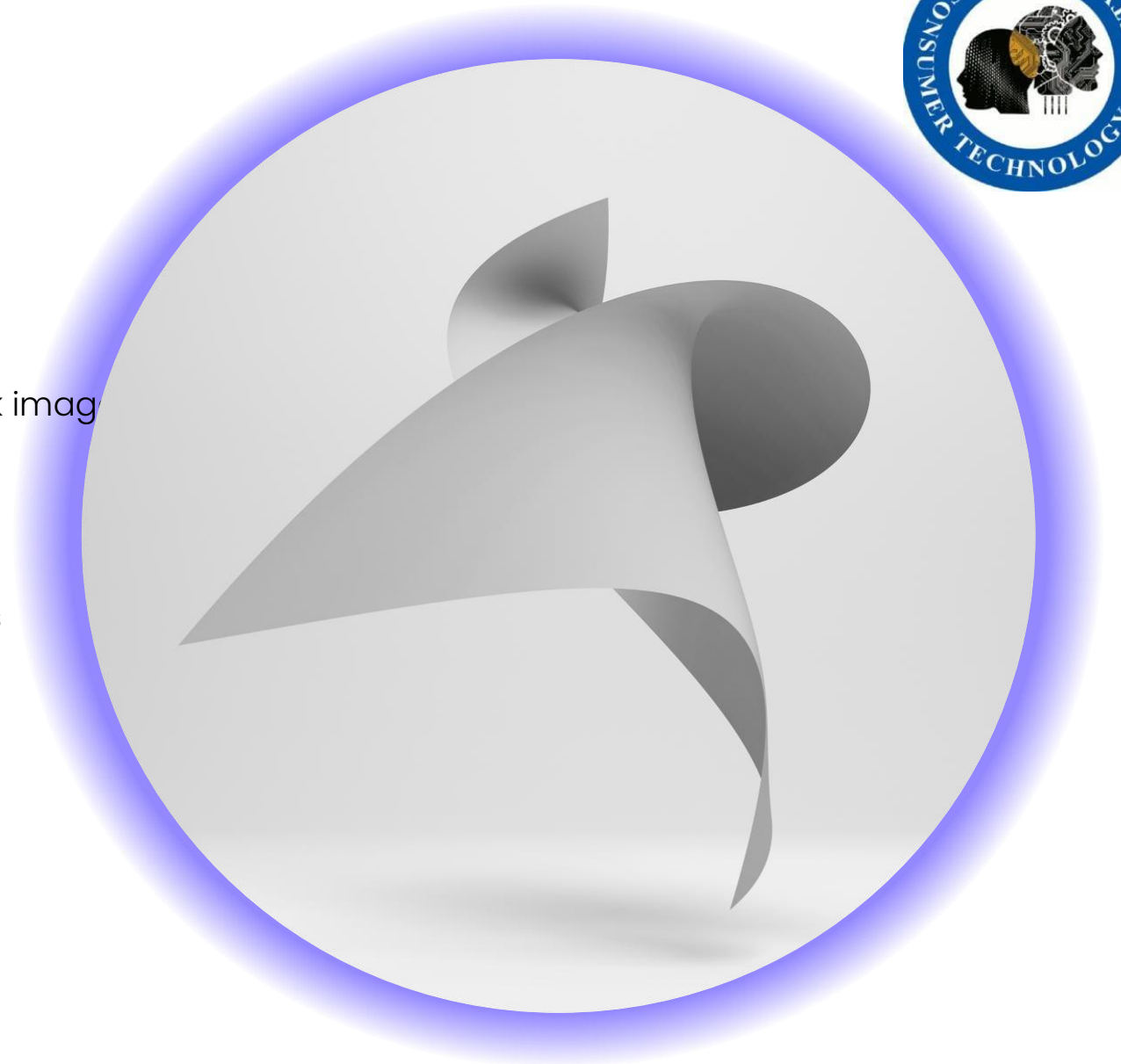
Full stack design - Server setups, frontend UI design

EPUB format, DAISY pipeline

(+ Indian languages)

Real-life usage in a Braille printer (Bonus)

<https://daisy.org/activities/software/pipeline/>





A Synchronous Webservice



[Scan] of book (PNG, PDF...)

↓
[Indic LLM]

↓
Text, Tables, Other

↓
[EPUB] format file

BLOCK DIAGRAM

EPUB Conversion Service



KEY COMPONENTS

ID	DESCRIPTION	EXAMPLE
1	Scan to Text software	Vision models (LLM, multimodal) (2026) Classic techniques, other ideas
2	Formatting software (server side)	Pagination of text, tables into EPUB
3	UI (frontend + backend), DB setup	Handles user interactions, asynchronous states, DB



2. GAMING MULTIMODAL DATASET

PROJECT BRIEF

Aim

Create a multimodal dataset with (image,Biological,Event) timestamped data from non-invasive wearables, for stress modelling

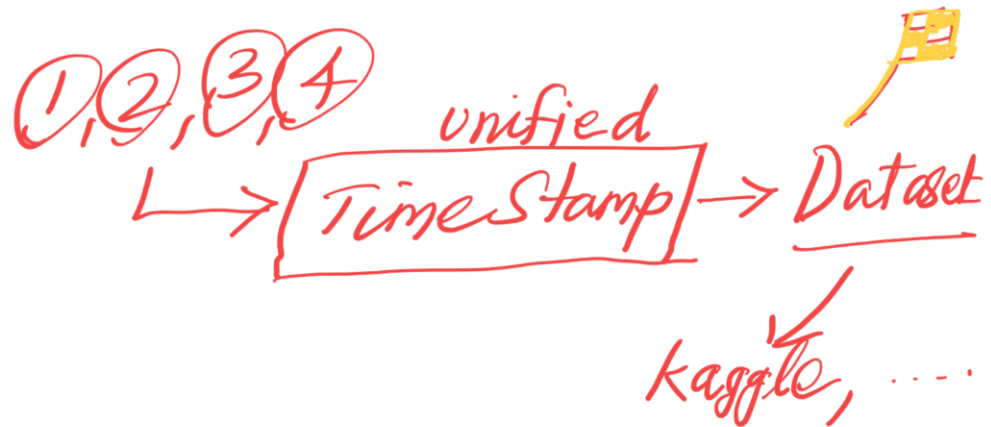
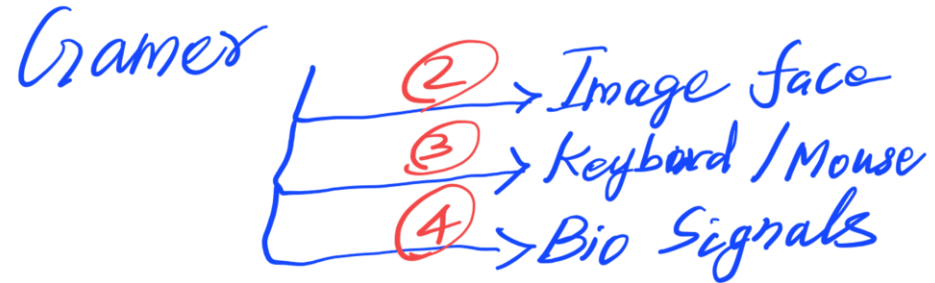
Challenge

- No framework to consolidate and provide data for model training purposes
- Require gaming, electronics, OS/device driver knowledge
- Minimum – Anonymised, game events for 1 game (Fortnite), Facial cues, Bio

What you will learn

- HW/sensor/SW interfaces
- Using AI tools for emotions, events
- Timestamping concepts
- AI-ready dataset generation, licensing models, Privacy constraints

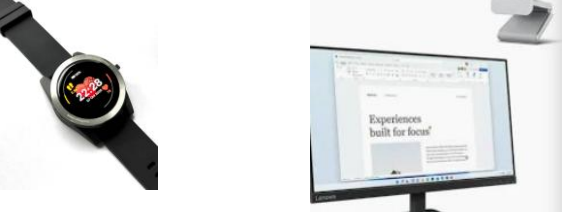




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Multimodal dataset
generation

KEY COMPONENTS

ID	DESCRIPTION	EXAMPLE
1	Hardware + sensors (HealthyPI Move*, webcam, Gaming PC setup, some games) - *Sensor to be shared on returnable basis after project	 Two images illustrating hardware components: a smartwatch with a black strap and a white face, and a white webcam mounted on a stand in front of a computer monitor displaying a website.
2	Software – Face camera, drivers, Sensor controller, synchronise timestamps, format converters to CSV	
3	Computer vision software to track facial/emotion changes (camera), and gaming events (ex a game kill)	

MILESTONES



Stage	Time	Initiated by	Description
Initiation	Week 0	CTSOC/Faculty	List of projects announced, Faculty to review and provide any feedback
Project intro to students/faculty (wk1)	Week 2	CTSOC	Details of project, open to QA from students/faculty, interaction, doubt clearing
Project execution	Week 3 - Week 15	CTSOC/Students/Faculty	Kickoff of projects, weekly meets (online/offline) with teams and mentors
Completion	3 mo/6 mo (depending on project)	Students/Faculty	Milestone for completion of project outcome, in stipulated timeframe