InsightPulse

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Github: https://github.com/yuetongalu/TECHIN515---Resource-Github.git

Problem Statement

Description of the Problem:

User research interviews often struggle with losing track of key discussion points and managing time effectively. Additionally, the post-interview debriefing process is typically time-consuming and cumbersome.

Intended User Group:

Designed for user research teams who need to streamline their interview processes and improve the efficiency of gathering and organizing insights.

Solution Description (1) - Overview

InsightPulse utilizes cutting-edge voice recognition and AI to enhance UX interviews.

- Automatically identifies and highlights key points during conversations, aiding researchers in maintaining focus and capturing essential details.
- Powerful backend analytics dashboard that processes and organizes the data.

This allows for efficient review and analysis post-interview, simplifying the debriefing process and enabling quick extraction of actionable insights.

Solution description (2) - key features

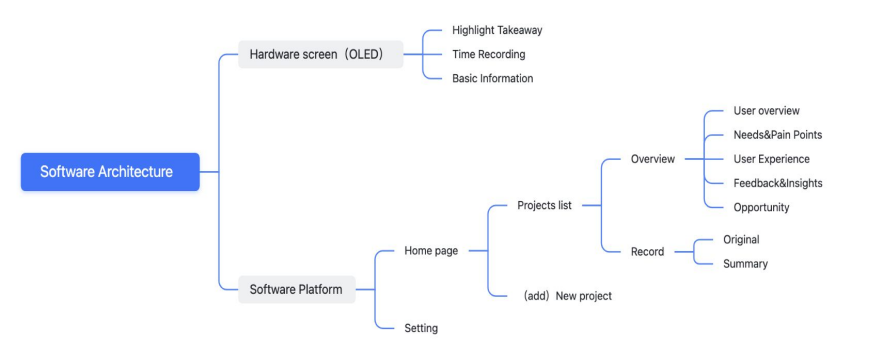
- **Real-Time Key Point Display:** Provides on-the-fly prompts about important discussion elements to guide researchers.
- **Efficient Time Management:** Monitors interview duration and helps keep the session on track without rushing or dragging.
- **Post-Interview Analytics Dashboard:** Facilitates quick and thorough review of the conversation, reducing the workload of sorting and summarizing interview data.
- **Privacy and Data Security:** Uses RC522 for robust data protection.

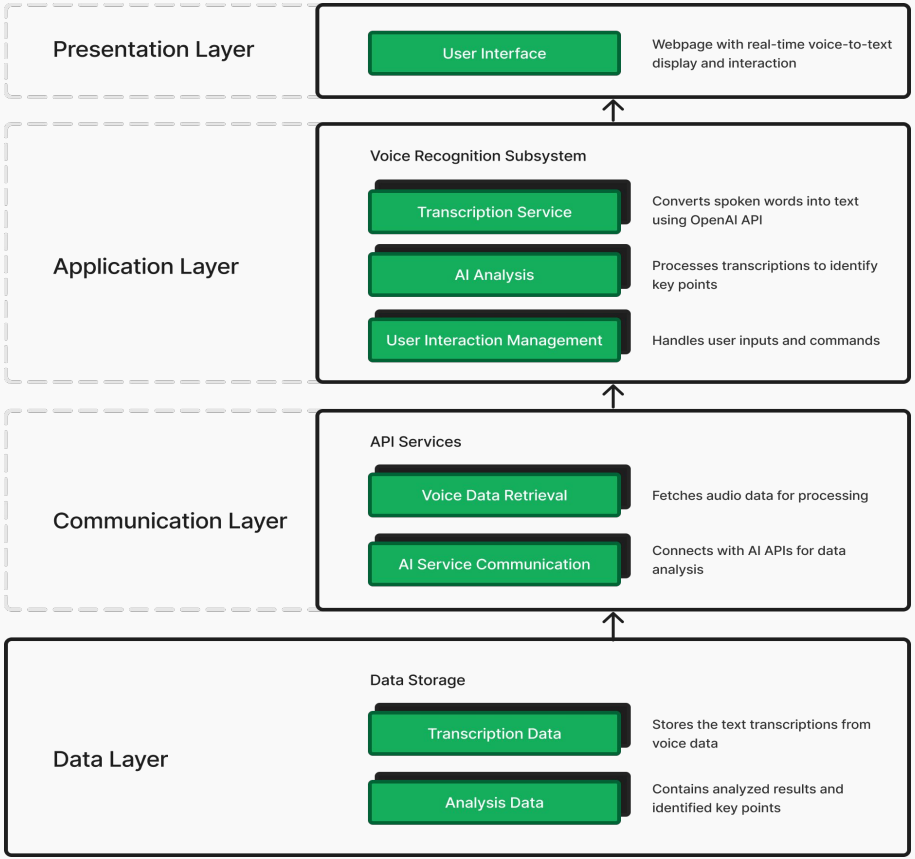
Update since Milestone1

- **Voice-to-Text Deployment:** Implemented voice-to-text functionality on Raspberry Pi and deployed it to the frontend webpage.
- **Developed code** to start voice-to-text conversion via NFC control.
- **Trained the model** to recognize key prompts based on design dimensions.
- **Database design and development:** Databases are developed inAWS and APIs are provided.
- **Dashboard Design:** Enhanced backend pages by adding and organizing information.
- **Enclosure iteration:** Comleted the design and production of the Medium fidelity encloure

Software Architecture

Product Architecture & Layer





Software Architecture - Summary

Data Collection & Processing:

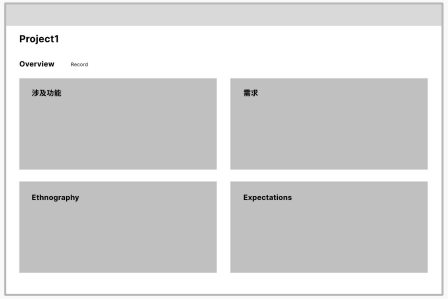
- Voice Recognition: Utilizes OpenAI API for transcription and analysis.
- Data Storage: Managed with Google Drive for security and accessibility.

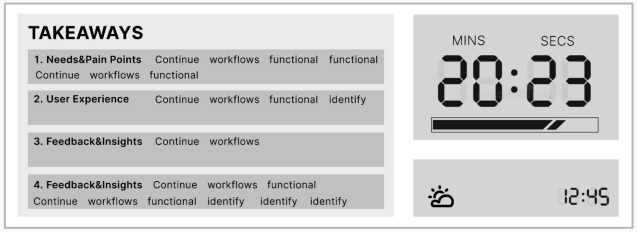
Software Design:

- User Interface: Dashboard for live data interaction and monitoring.
- Functionality: AI-driven prompts and analysis for researcher support.

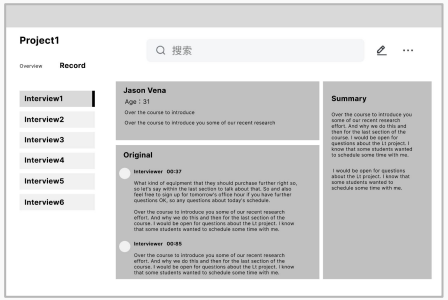
Software Architecture - User Interface

HW





SW



Hardware Architecture

Power Supply
9V 2A Power Supply Adapter

Microphone
USB MINI microphone

NFC Sensor
RC522 RFID

Switch
KCD1-102 2 Way Rocker Switch

MCU
Raspberry pi5

Cloud
Google Drive

Server
Github

Deploy
Wordpress

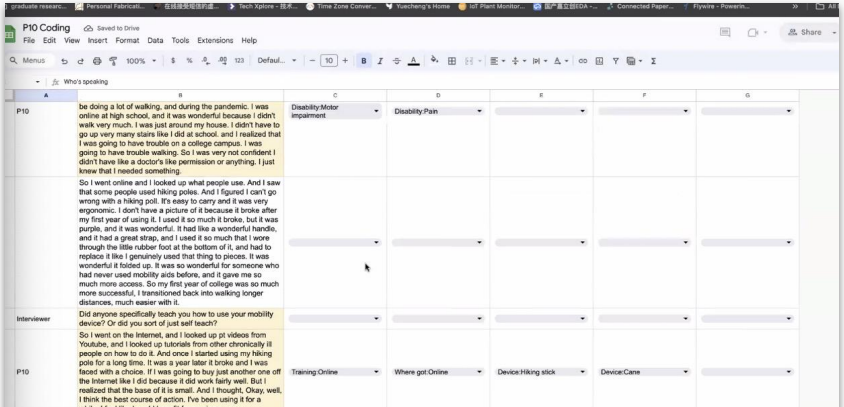
AI
Open AI API

OLED
Graphic LCD Display Module

LED
Light

Machine learning

To ensure that GPT's responses better meet the requirements of our field, we manually maintain a spreadsheet, manually tagging sentences from some interviews to create our training dataset.



Future work

- **Circuit Connection and PCB Design:** Connect NFC, LED, and OLED components, and design the PCB for integration.
- **Optimize the ML part:** According to our scenario, continue to train teh model to make GPT’s feedback consistent with our requirements.
- **Iterative Design part:** Update the user interface design of software and hardware. Design and print the final version of the enclosure.

Market

- **The global user research software market:** Valued at USD 235.19 million in 2024 and is expected to expand at a CAGR of 17.97% during the forecast period, reaching USD 633.99 million by 2031.
- **End Users:** Large Enterprises, SMEs through Cloud, On-Premises
- **Behaviorial:** User research software encompasses tools designed to streamline collecting, analyzing, and interpreting user behavior and preferences data.
- **Geographic**: North America, Europe, Asia-Pacific, South America, Middle East, and Africa, North America is estimated to be the largest shareholder in the market.

Budget update

Course Budget	$	350.00
Amazon Purchases	$	130.97
Non-Amazon Purchases	$	99.19
Total Spent	$	230.16
Remaining	**$**	**119.84**

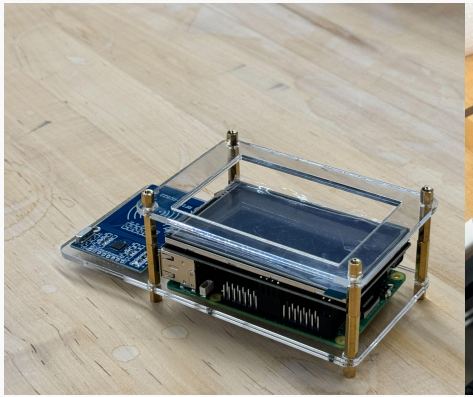
mazon Purchases

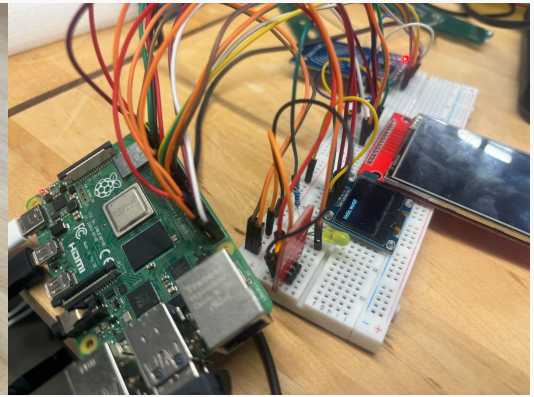
PPLIER	LINK	ACTUAL PRICE
	https://www.adafruit.com/product/5813?gad_source=1&gclid=CjwKCA	$ 88.17
		$ 11.02

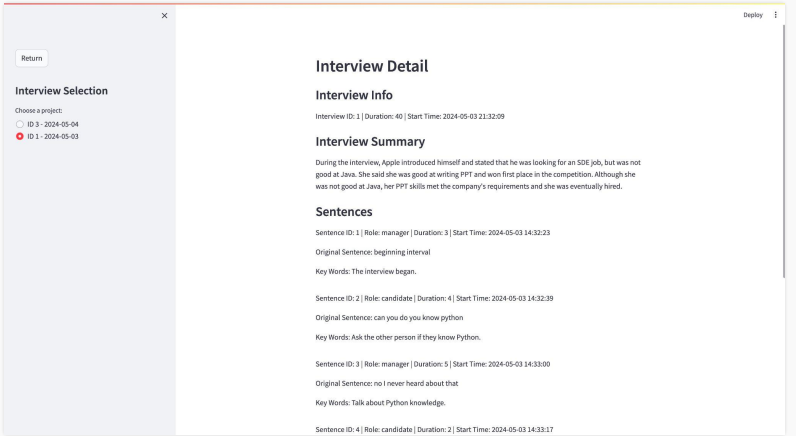
rchases

			Qty	Order Subtotal	Shipping	Tax	TOTAL AMOUNT
4/12/2024	# 114-7903822-6228220	KISEER 2 Pcs USB 2.0 Mini Microphone,	2	$ 8.99	$ -	$ 0.92	$ 9.91
4/12/2024	# 114-7903822-6228221	WWZMDiB 5Pcs RFID Kit	5	$ 9.99	$ -	$ 1.02	$ 11.01
4/19/2024	# 114-0518185-9696245	ElecLab 7.4 Inch 1280x400 Touchscreen Monitor HDMI Capacitive LCD Display Speaker Case for RPI 4B 3B+ 3B 3A+ 2B B+	1	$ 39.90		$ 4.07	$ 43.97
4/19/2024	# 114-4172688-8222649	OSOYOO 3.5" HDMI LCD Touch Screen for Raspberry Pi	2	$ 59.96		$ 6.12	$ 66.08

Picture



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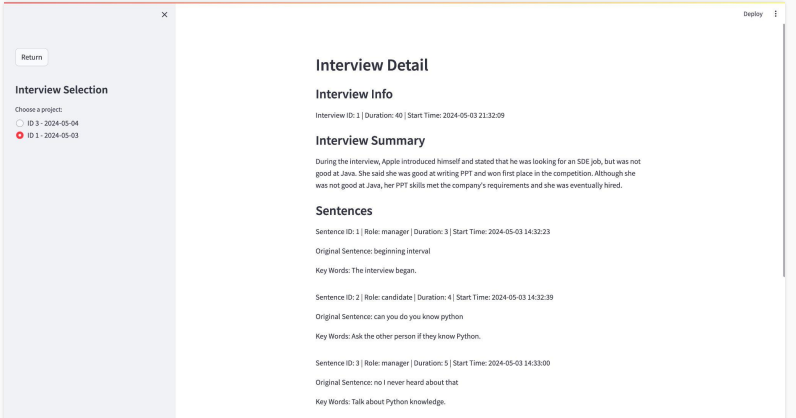
Interview Selection
Choose a project:
ID 3 - 2024-05-04
ID 1 - 2024-05-03
Interview Detail
Interview Info
Interview ID: 1 | Duration: 40 | Start Time: 2024-05-03 21:32:09
Interview Summary
During the interview, Apple introduced himself and stated that he was looking for an SDE job, but was not good at Java. She said she was good at writing PPT and won first place in the competition. Although she was not good at Java, her PPT skills met the company's requirements and she was eventually hired.
Sentences
Sentence ID: 1 | Role: manager | Duration: 3 | Start Time: 2024-05-03 14:32:23
Original Sentence: beginning interval
Key Words: The interview began.
Sentence ID: 2 | Role: candidate | Duration: 4 | Start Time: 2024-05-03 14:32:39
Original Sentence: can you do you know python
Key Words: Ask the other person if they know Python.
Sentence ID: 3 | Role: manager | Duration: 5 | Start Time: 2024-05-03 14:33:00
Original Sentence: no I never heard about that
Key Words: Talk about Python knowledge.
Sentence ID: 4 | Role: candidate | Duration: 2 | Start Time: 2024-05-03 14:33:17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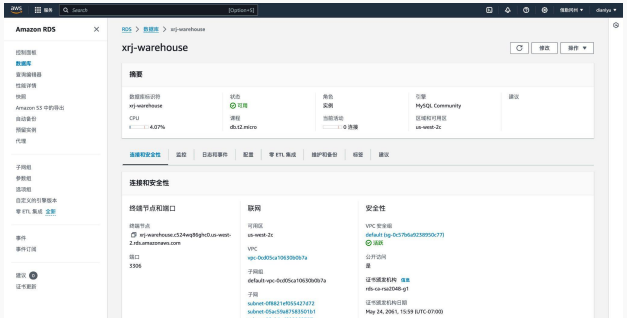
Amazon RDS
xrj-warehouse
连接和安全性

Sources

- https://straitsresearch.com/report/user-research-software-market
- https://www.linkedin.com/pulse/user-experience-ux-research-software-market-size-swm9f/

Thank you