Using Virtual Reality for Vocational Exploration

APSE 2023

Welcome

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Heritage Christian Services

Dr. Roshan Pieris
Rochester Institute of Technology

Today’s session

01 Introductions

02 Background

03 Results

04 Future

01

Introduction

Who we are, what we do

Who Are You?

Why are you interested in VR?

Who Am I

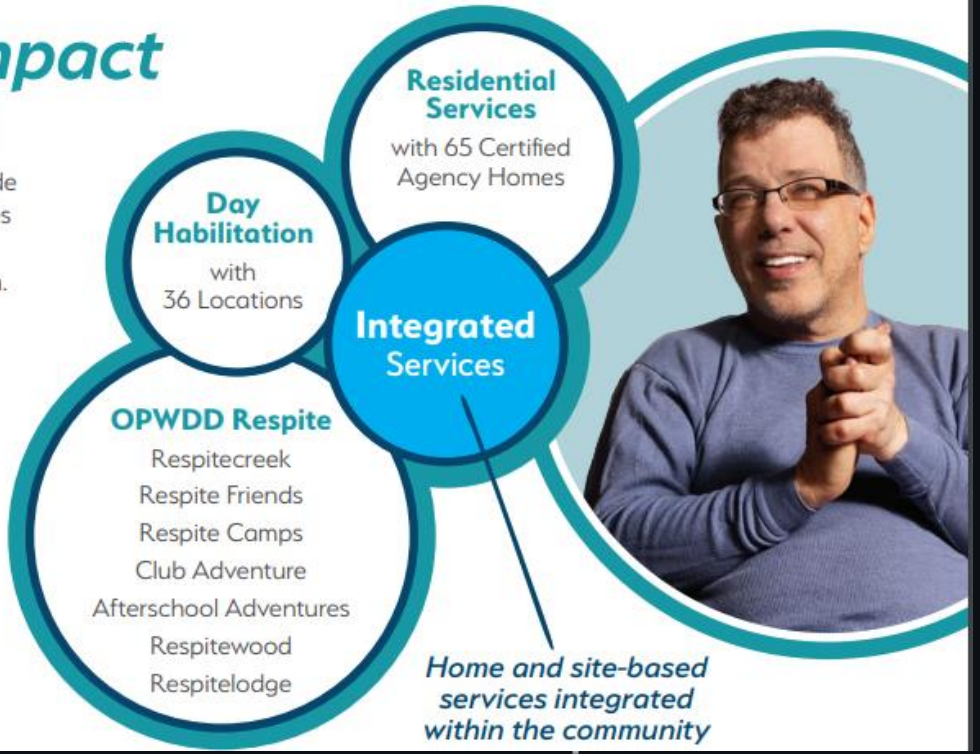
- Background
- Supported Employment
- My Why

Heritage Christian Services

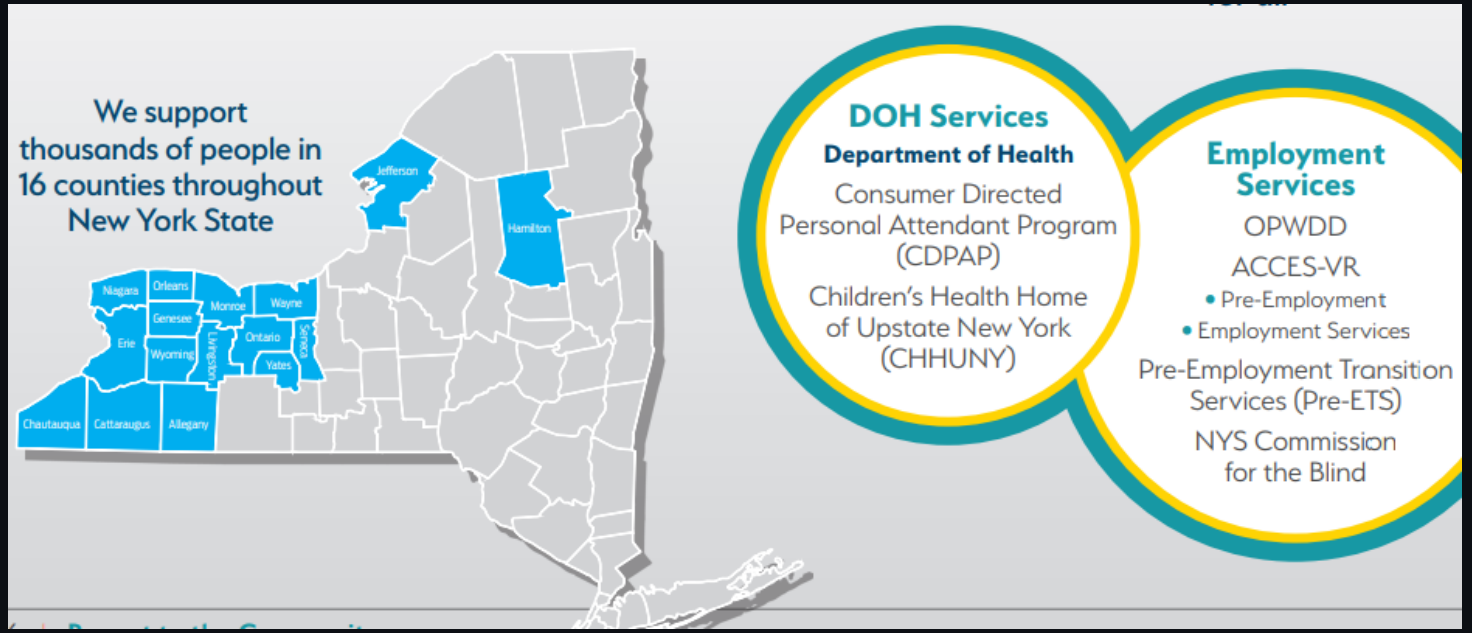
Value and Impact

Services at a glance

Heritage Christian Services offers a wide array of different programs and services to meet the ever-diversifying needs of people who choose us to support them.



Heritage Christian Services



Employment Alliance Programs

ACCES VR
Adult Career and Continuing Education Services - *Vocational Rehabilitation*

Project | SEARCH®

NEW YORK STATE OF OPPORTUNITY.
Office for People With Developmental Disabilities

NEW YORK STATE
Commission for the Blind

By the numbers

200+
Employed

28
Staff

76%
Billing Rate

Employment Alliance Staff

Vice President Education, Employment and FL Day Services					
Director of Employment Alliance and Director of ERN					
Associate Director of Employment Alliance FL		**Associate Director of Employment Alliance FL**		**Associate Director of Employment Alliance WNY**	
Project Support Specialist					
Coordinator FL		**Coordinator FL**	**Coordinator of Prevocational Services**		**ERN Success Coaches**
Employment Specialist 1	Employment Specialist 3	Employment Specialist 6	PS Staff1	Employment Specialist 13	Success Coach 1
Employment Specialist 2	Employment Specialist 4	Employment Specialist 7	PS Staff2	Employment Specialist 14	Success Coach 2
	Employment Specialist 5	Employment Specialist 8		Employment Specialist 15	
		Employment Specialist 9		Employment Specialist 16	
		Employment Specialist 10			
		Employment Specialist 11			
		Employment Specialist 12			
		ES13			

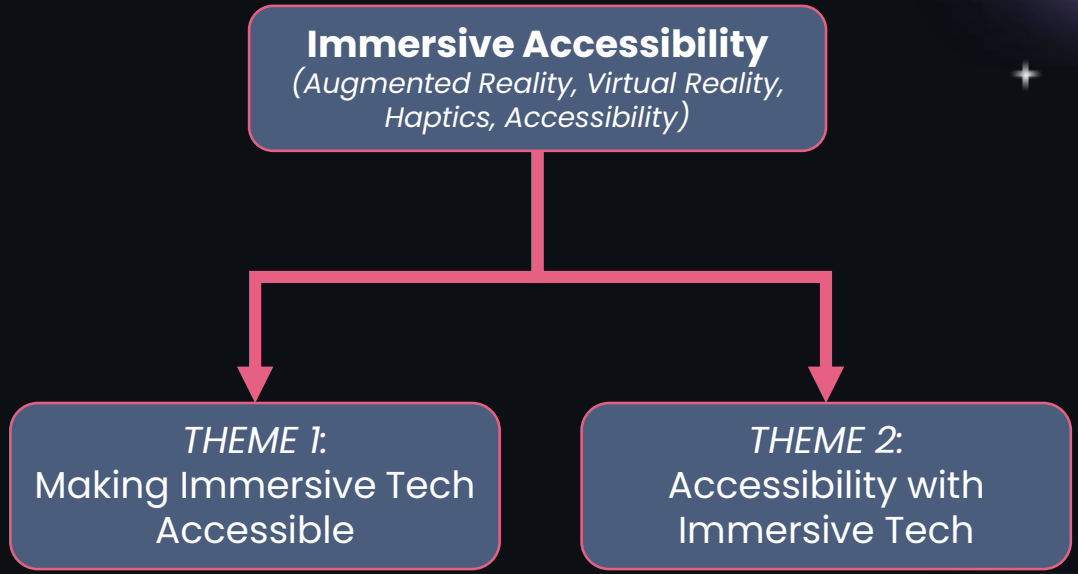
Roshan

Roshan/RIT areas of research

Assistant Professor
- RIT iSchool

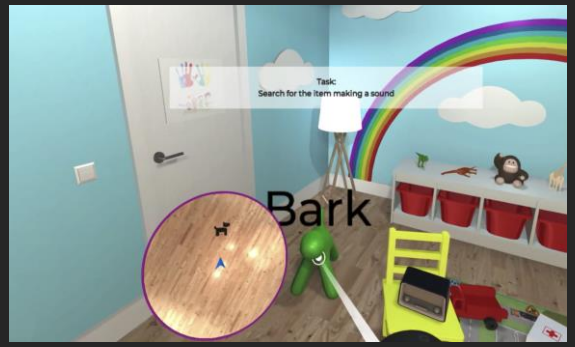
Co-director of the
En-Ability Lab

General Research
focus on HCI,
Accessibility and XR



Example Research Projects

THEME 1:
Making Immersive Tech Accessible

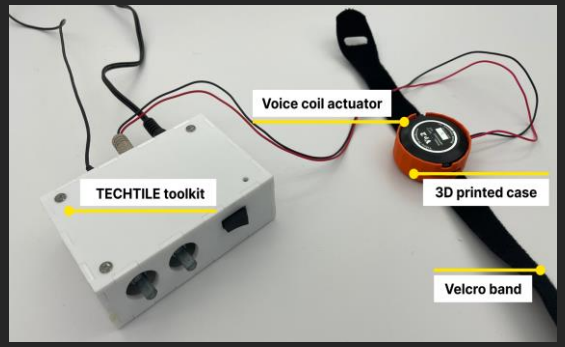


SoundVizVR

In this project we explore making various sound cues in virtual reality accessible for Deaf or Hard of Hearing VR users. We explored several minimap and on-object based visualizations with text and icons to represent different sound types

@ASSETS 2022

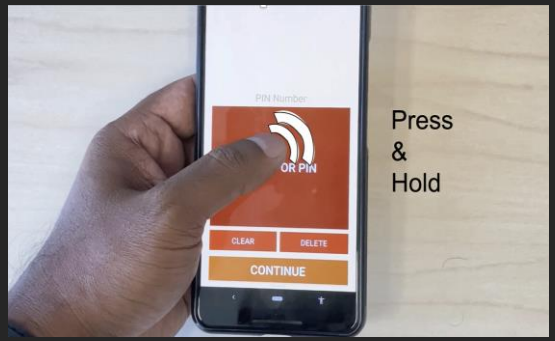
THEME 2:
Accessibility with Immersive Technologies



HapticCaption

Haptic Captioning is project that looks at enhancing captions for deaf or hard of hearing users. Using vibrotactile feedback, we explore presenting speaker identification and vocal emotion information that can improve the accessibility of captions.

@CHI 2023



OneButtonPIN

In OneButtonPIN, we aim to make PIN based authentication accessible for blind and low vision users. We present a single button which when pressed, held and released can input digits of the PIN codes.

@MobileHCI 2022 – Best Paper Award

02

Background

The Seed of the Idea

Interest in Video Games

What's out there?

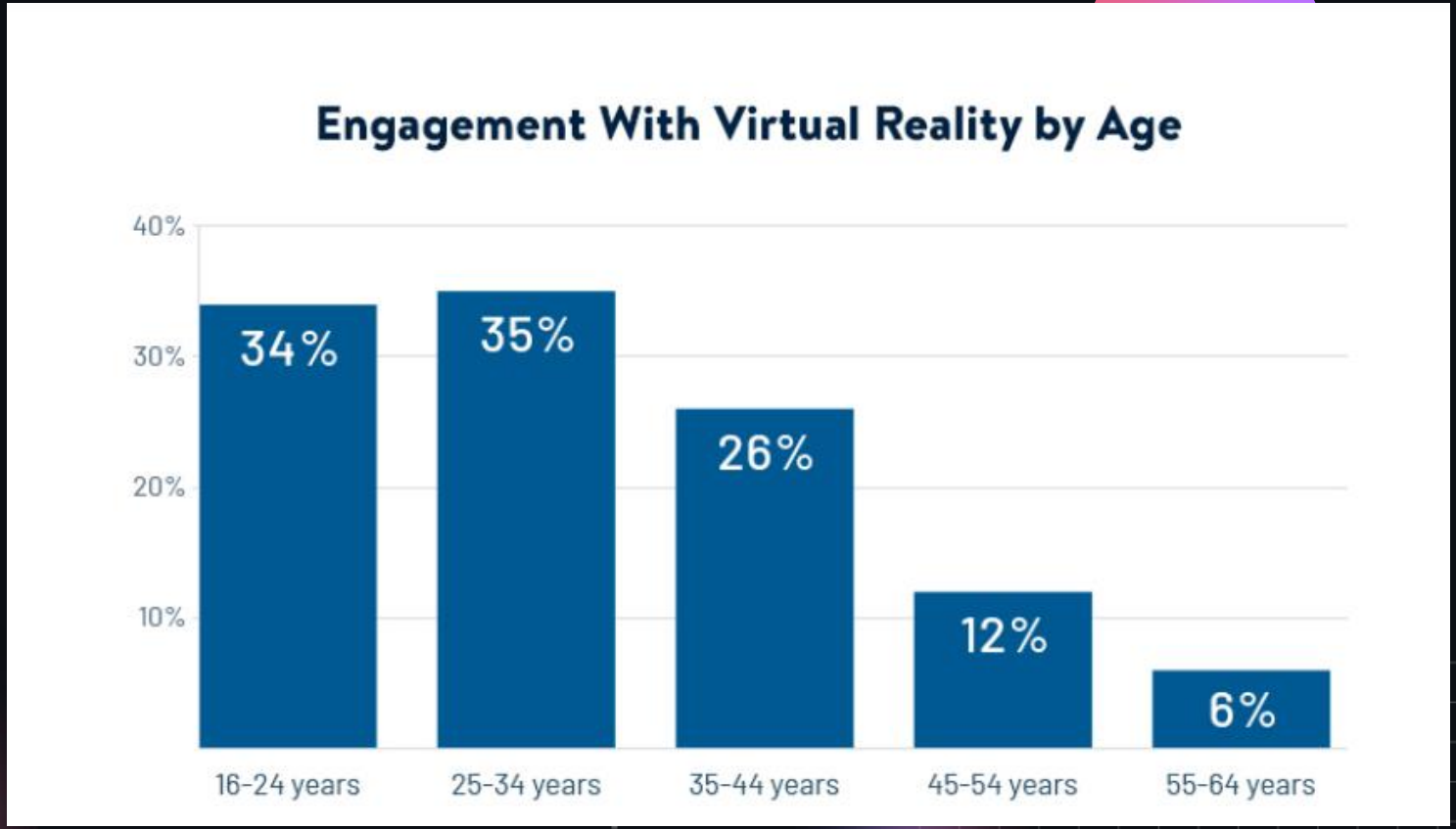
Controlled Environment

92%

of People with Disabilities played video games regularly in a Netherlands study, (Chin, Wing 2021)

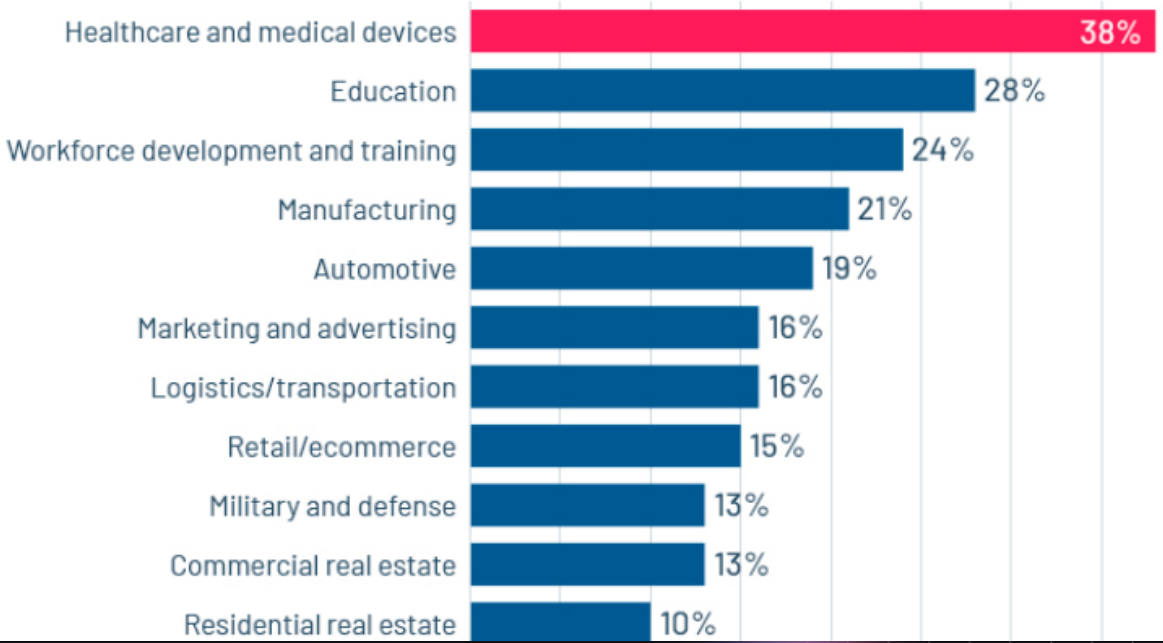
41%

Average of children and adolescents with autism who spend the majority of their free time playing video games versus 18% of youths in the general population (Mazurek, Shattuck, Wagner, and Cooper 2013).


Engagement With Virtual Reality by Age
40%
30%
20%
10%
34%
35%
26%
12%
6%
16-24 years
25-34 years
35-44 years
45-54 years
55-64 years

Industries Expected to Face the Most Disruption by Immersive Technologies

Besides Gaming and Entertainment



INITIAL RESEARCH

Anyone else doing this?

Who’s an expert?

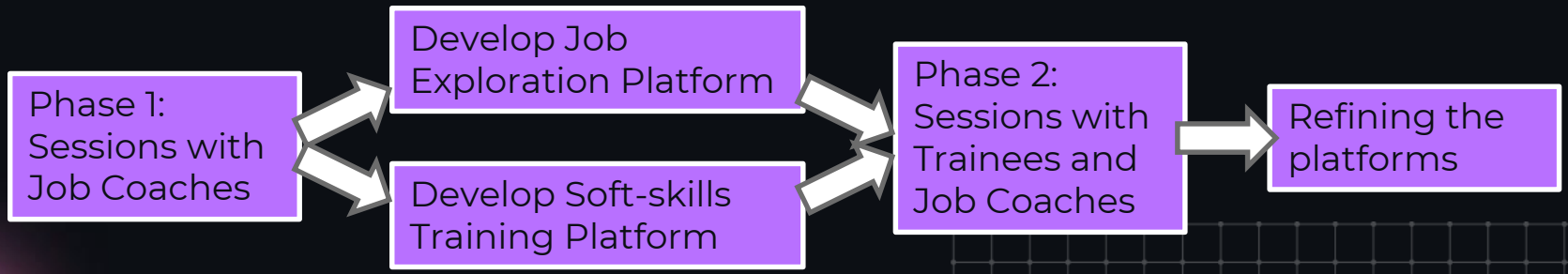
Connection with RIT

RIT

CAIR
Center for Accessibility and Inclusion Research

INITIAL PLANNING-

Introduction through RIT's Frameless XR Labs



03

Results

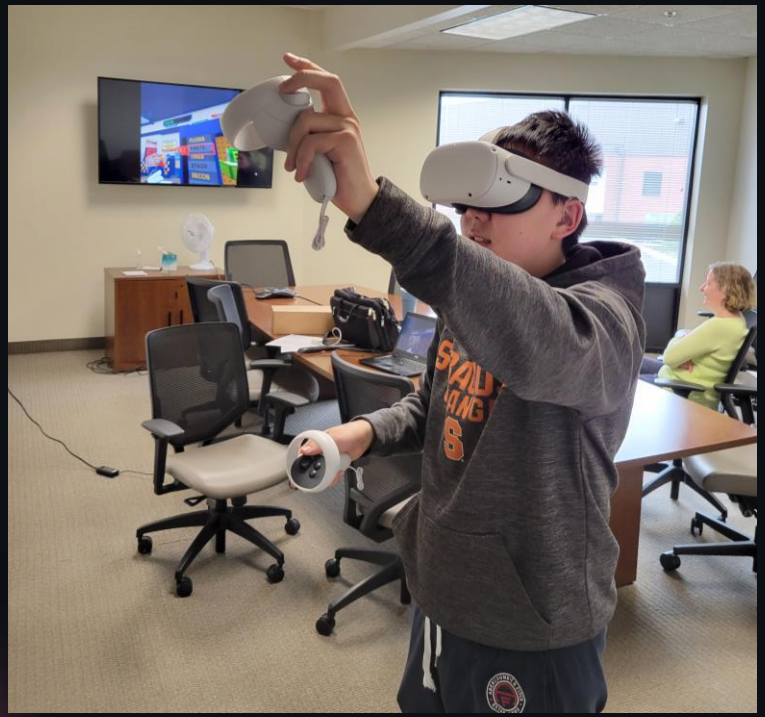
Phase 1:
WE GOT JOB COACHES INVOLVED

Conducted a workshop

- - Understanding the process
- - Trying out scenarios
- - Brainstorming

USE IN BOCES CLASSROOMS

USE IN ASSESSMENTS



JOB SIMULATOR

- Software is $20
- Takes 1-2 hours to set up and get going
- Job Simulator has 4 different job types
- Headsets are $399
- Can be billed as observations through OPWDD
- Can also use for VR, High School Programs

AUTO MECHANIC

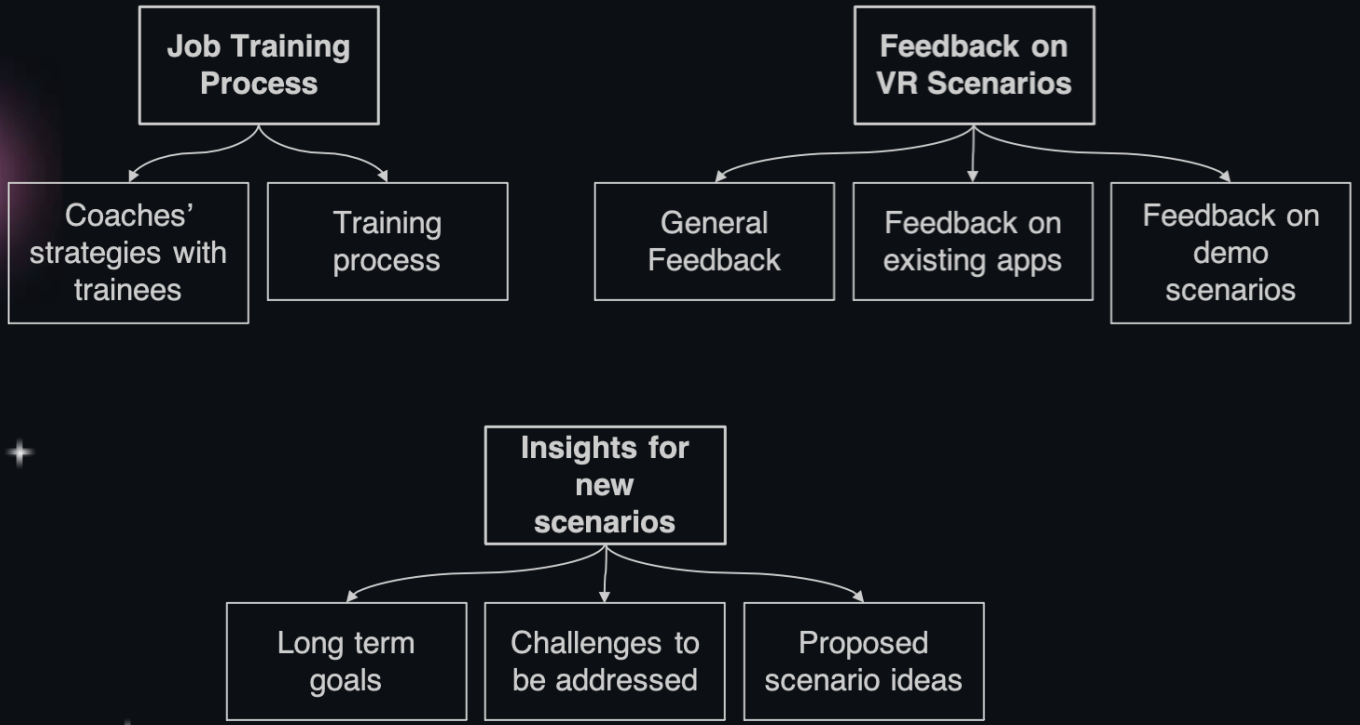
STORE CLERK

ALL NEW!!
DISCOUNT ITEMS
SLIGHTLY DAMAGED GOODS
AT A SLIGHT DISCOUNT!
BUY ONE GET ONE 25% OFF!
SLUSH-E MART
STORE HOURS
KETCHUP 3.99
SALE-O-MATIC
CASH
KRISPIE'S CRISPIES
Dapple Sprackles
J.S.U
BREAKFAST
CAUTION
BUNS!
LOTTERY TICKETS
FREEZER
MERCH
FRIDGE
SAFE
TAKE A COIN LEAVE A COIN
SHIFT MANAGER

OFFICE WORKER

Scenarios

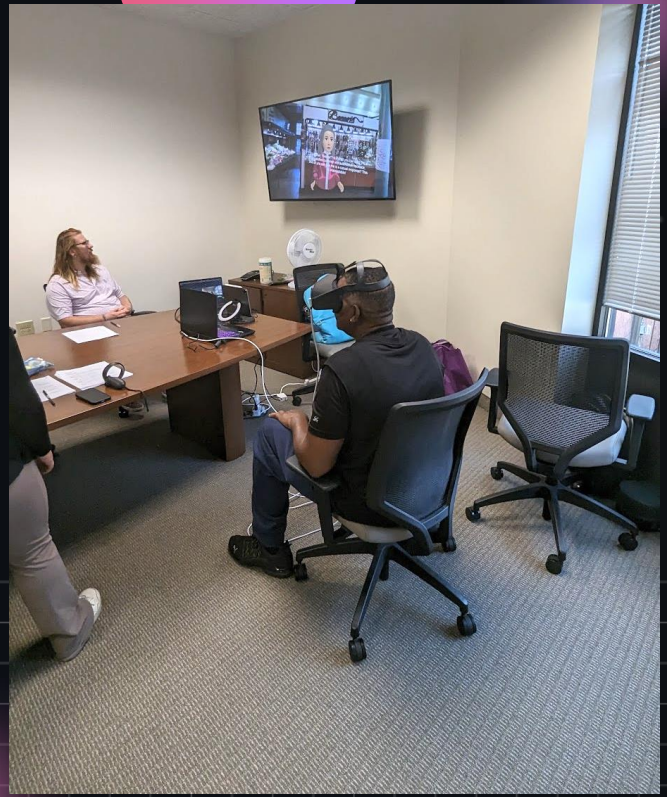
Findings from Phase 1



Phase 2: New platforms with Trainees

Trainees explored two different platforms

- Job Exploration Platform
- Soft Skills Training Platform



Job Exploration Platform

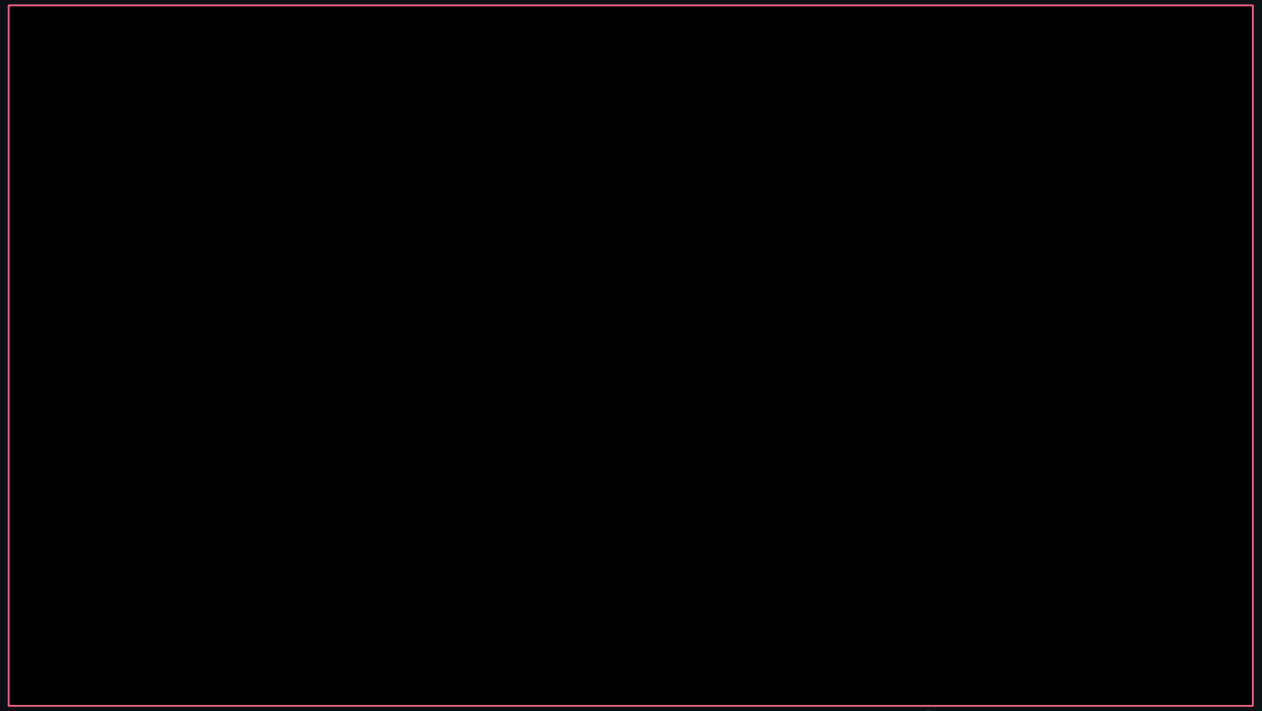
A platform to let trainees immersively explore different jobs

Job coach records job sites or instructions using a 360-degree camera

Upload to the job exploration platform

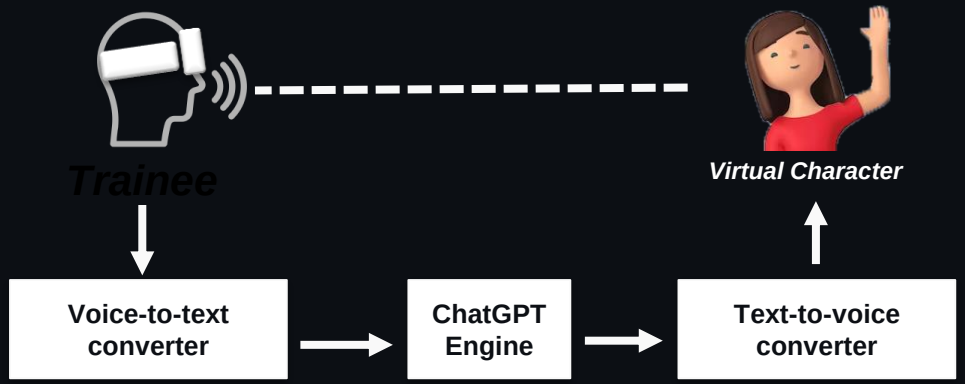
Trainee explores the job sites to understand the job characteristics

Job Exploration Platform



Soft-skills training platform

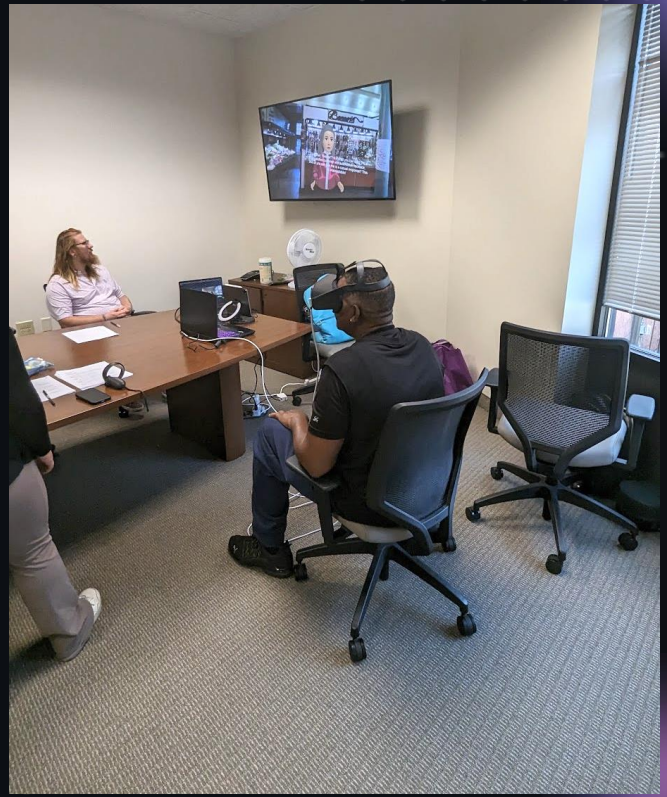
- A platform to train conversational skills of trainees.
- We use ChatGPT engine as the conversational interface.
- Scenarios can be created using ‘text prompts’



Soft-skills training platform

Findings from Phase 2

- Job exploration
- Chat Bot
- Other applications



Takeaways

Excitement

Group Dynamics

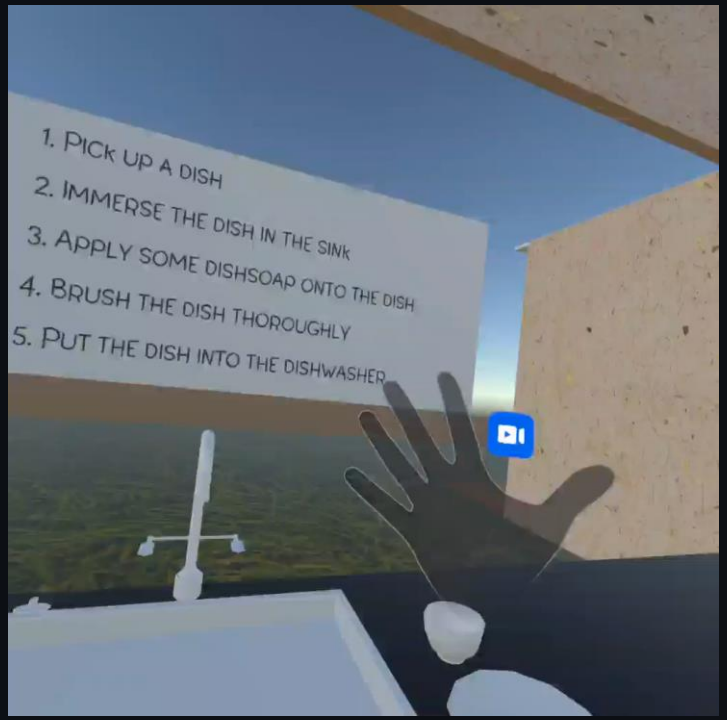
Ease of Use

Job Coaches

04

Future

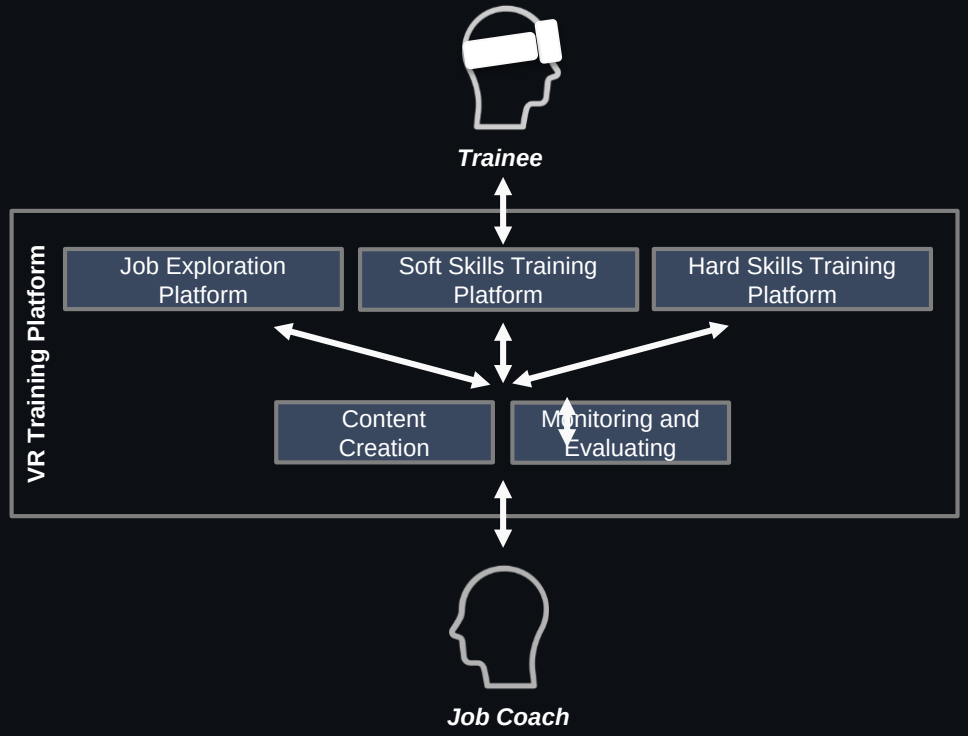
FUTURE PLANS



Creating custom training scenarios

Exploration of the effect of haptics

Future Plans



Fully integrated platforms with tools for job coach and trainees

Tools for job coaches to create content and monitor the training progress of the trainee

FURTHER RESEARCH AREAS

Customized/localized content

Job Coach Training

Study effectiveness across groups

FURTHER RESEARCH AREAS

Partnerships with NYS

Partnerships with Meta

DO YOU WANT TO BE A PART OF THIS?

Q AND A

WANT TO TRY THEM OUT?