



# HA1

AI-driven  
Recommendation System

## Pitch Presentation



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# Outline

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Literature Review

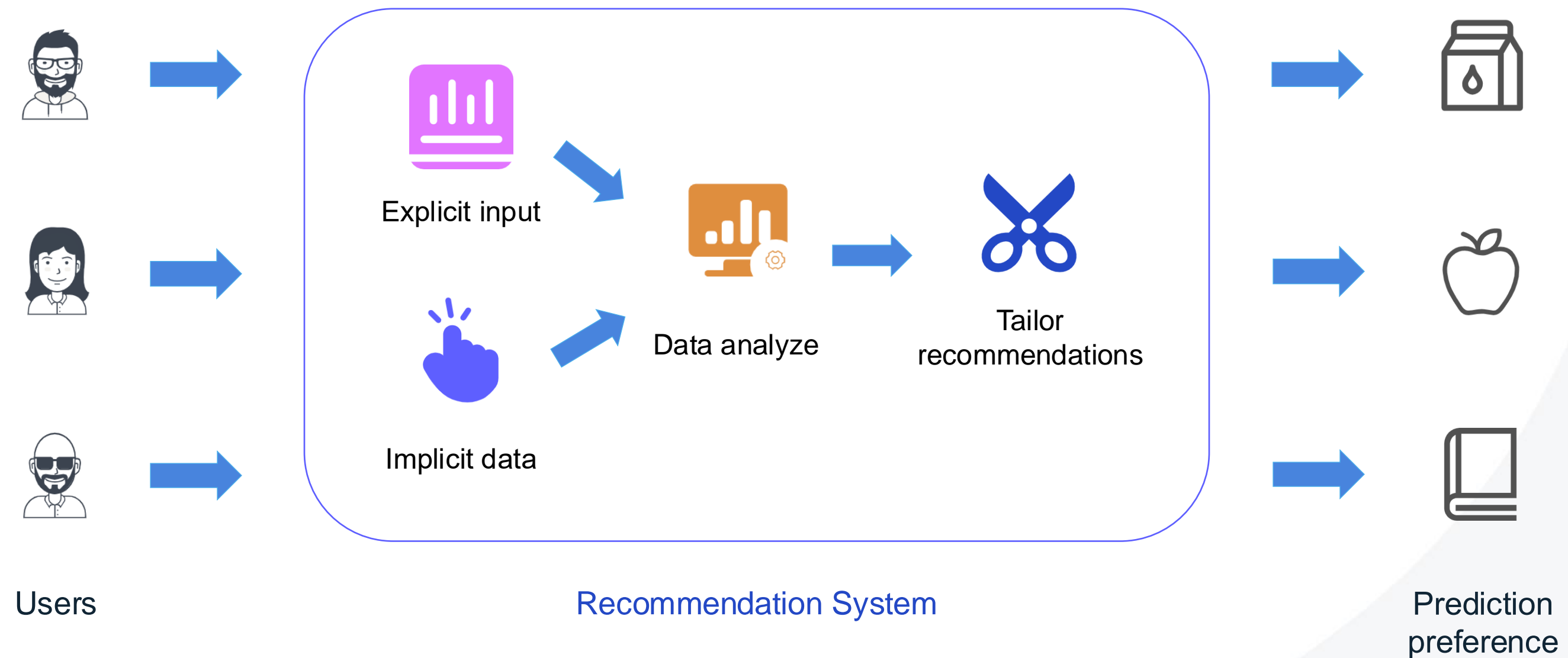
Training and Testing

Comparison and Evaluation



# Introduction

## What is recommendation system?



# Introduction

## Why is recommendation system important?



# Solve the Problem of Information Overload



# Improve User Experience and Satisfaction



# Increase Sales and Business Value



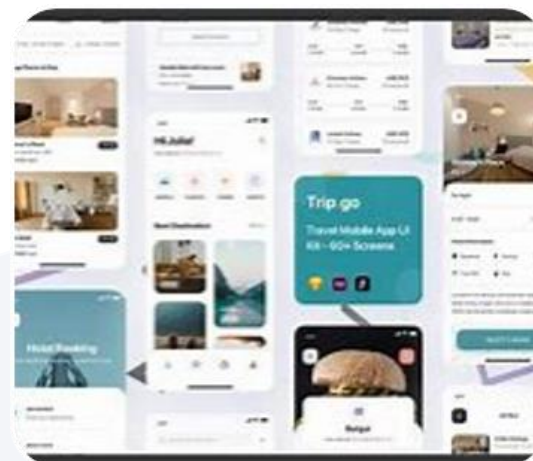
# Introduction

## Examples of Recommendation System



### ***Example 1***

Netflix, as a film and television recommendation system



### ***Example 2***

Trip is a travel recommendation system



### ***Example 3***

Amazon, as a global e-commerce platform

# Introduction

## How AI is incorporated in recommendations systems

### Traditional Method

- Static rules
- Limited personalization
- Cold start problem

**VS**

### AI Techniques

- Learning user preferences
- Real-time user profiling
- Higher accuracy

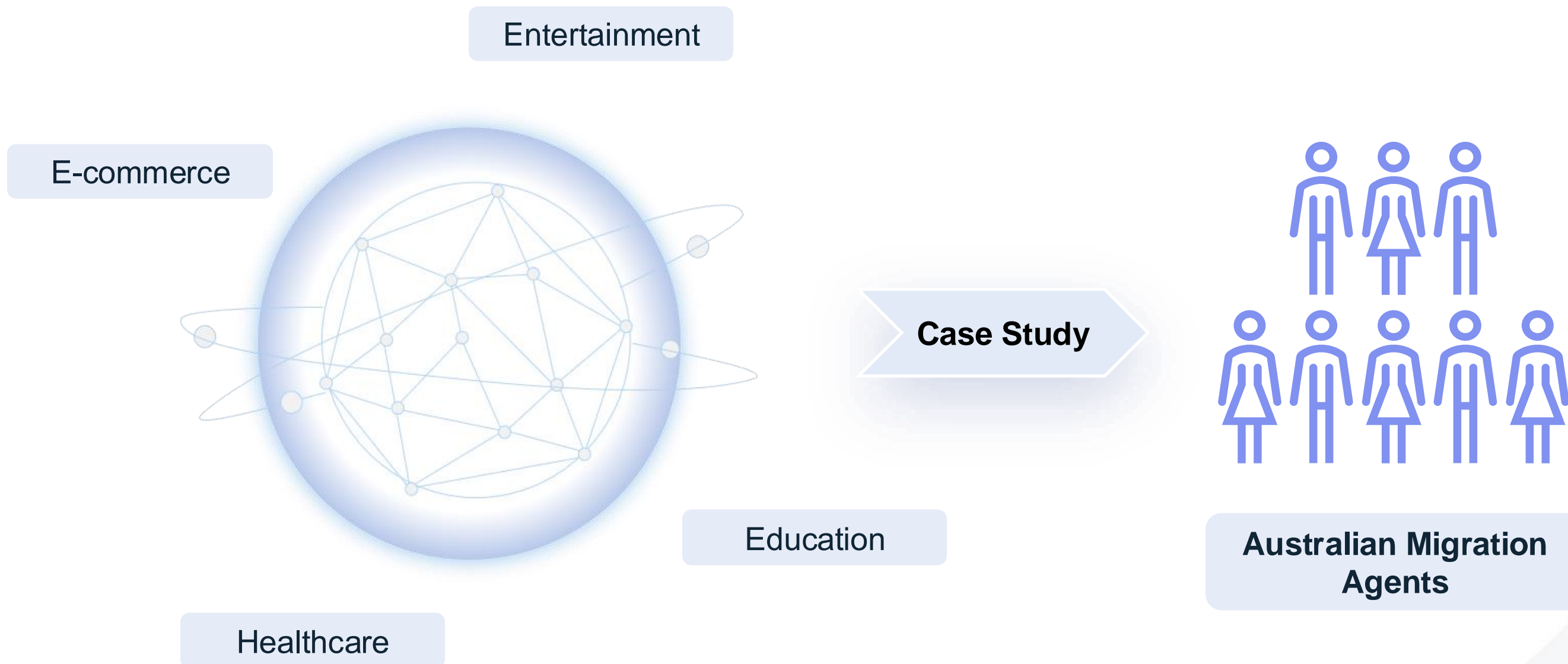


### AI Advantages

- Dynamic adaptation
- Deep feature learning
- Multi-modal data (text/image)



# Introduction



# Motivation - Recommended by Australian Migration Agent

***How can we find an migration agent without an intelligent recommendation system?***

**01**

Search Engine (Google/ Baidu)

**02**

Social media

**03**

Recommendation by relatives and friends





# Motivation: Problem 1 - Misguided Selections

## Problem Description

- Users are matched with agents who lack relevant visa expertise
- Language or time zone issues hinder communication
- Inexperienced or unresponsive agents increase risk

## What will happen if not addressed

- ❌ Application fails due to incorrect guidance
- 😞 Miscommunication causes frustration and delays
- 💰 Money and time are wasted on the wrong agent
- 😫 Decision fatigue and anxiety, poor choices made under pressure



# Motivation: Problem 2 - Information Overload

## Problem Description

- 7,000+ migration agents in Australia
- Different specializations, success rates, and fee structures
- Migrants face decision paralysis due to overwhelming choices

## What will happen if not addressed

- 🕒 Weeks wasted researching
- ❌ Higher visa rejection rates
- 💰 Wasted application fees
- 📅 Missed critical deadlines

## Motivation: Problem 3 - Lack of Transparency

### Problem Description

- No reliable verification of agent performance
- Success rates and expertise claims unverified
- Reliance on word-of-mouth without metrics

### What will happen if not addressed

- 🗨️ Selections based on marketing
- 💰 Premium fees to poor performers
- 📄 Unnecessary rejections
- 😞 Abandoned migration plans



## Case Presentation - Meet Andrew



**Andrew**

👤 Software Engineer from India  
💼 8 years of experience  
AU Seeking Skilled Migration visa  
❓ Needs to find the right agent



**Andrew's Challenge:**

"With over 300 potential migration agents claiming expertise in skilled migration, how do I find the one best suited for my specific case?"



**Without a reliable system, Andrew risks:**

- Choosing an agent with limited IT migration experience
- Wasting time researching without clear metrics
- Paying premium fees without guaranteed results



# Case Presentation - How Andrew Uses Our System



## Input Profile

Details about  
occupation,  
experience, visa



## AI Processing

4,000+ agents  
analyzed



## Match Results

Top 3 specialized  
agents



## Direct Connection

Book consultation &  
apply



## Case Presentation - Expected outcome

### Before vs After

#### BEFORE

- ✗ Uncertain process
- ✗ High rejection risk
- ✗ Extra costs
- ✗ Long delays

#### AFTER

- ✓ Streamlined process
- ✓ First-time approval
- ✓ Cost savings
- ✓ Clear timeline



# Methodology



# Methodology - Literature Review



## ***Neural Collaborative Filtering***

- A deep learning-based approach
- Use neural networks to model user-item interactions
- Complex, non-linear patterns



## ***Light Graph Convolutional Network***

- Lightweight graph neural network model (GCN)
- Inheriting the neighbor information aggregation idea of GCN
- Improved computing efficiency



## ***Deep Neural Networks***

- Two-Tower Neural Network
- Multilayer nonlinear transformation
- The accuracy of the model



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