AI-Powered AR Assistant: Empowering Inclusive Customer Service

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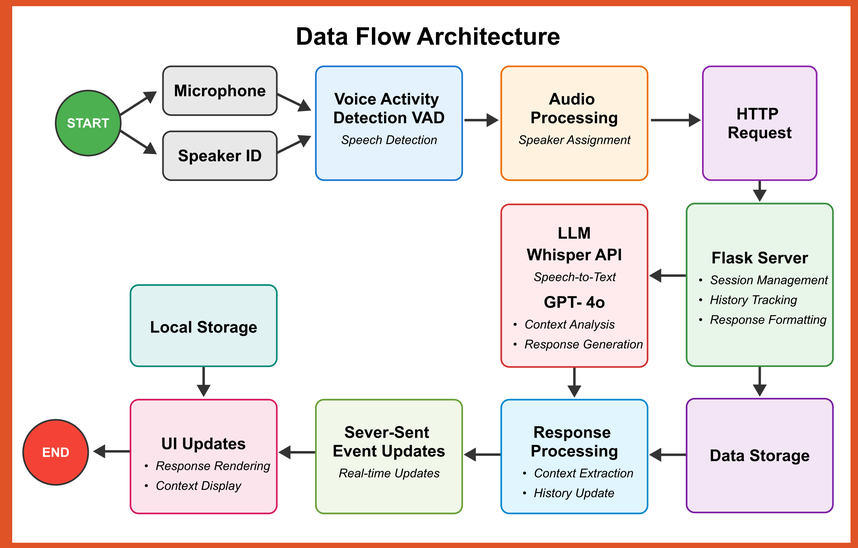
INTRODUCTION

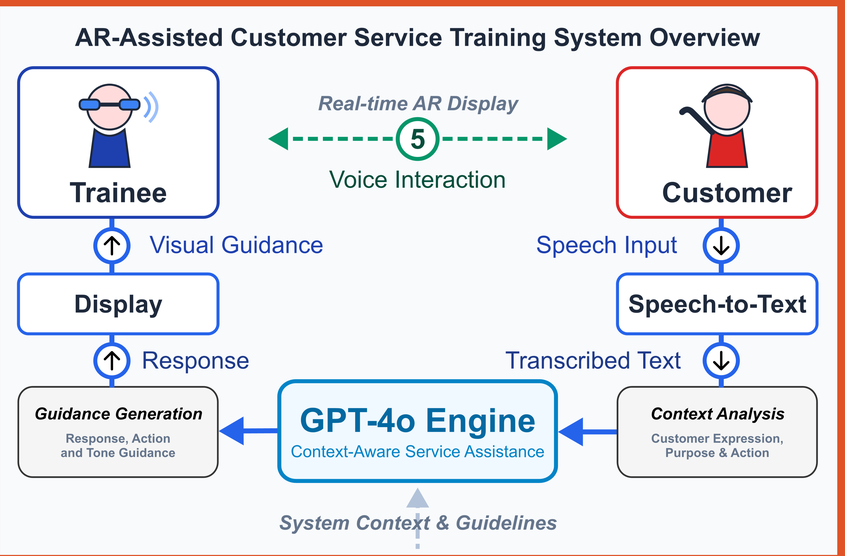
Customer service interactions require real-time decision-making, clear communication, and emotional intelligence – skills that can be challenging for individuals with social anxiety, language barriers, or cognitive differences. Our research explores how augmented reality (AR) combined with large language models (LLMs) can create a more inclusive workplace by providing discreet, real-time guidance to service representatives. This system uses GPT-4o to analyze conversations and deliver context-aware suggestions through AR glasses, reducing cognitive load while maintaining natural interaction flow. By transforming customer service into a supported experience, we aim to empower individuals who might otherwise struggle in these roles, demonstrating how technology can bridge the gap between diverse abilities and professional success.

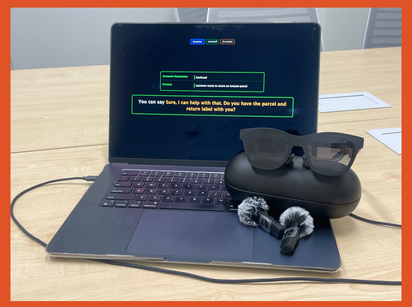
RESEARCH QUESTIONS

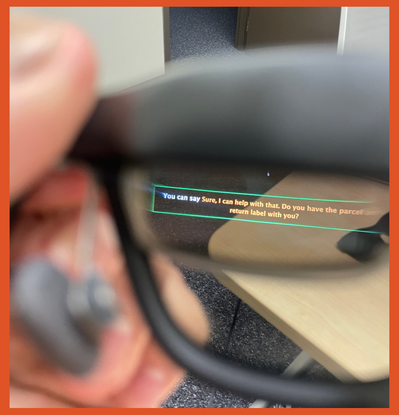
RQ1: How does the presence of projected suggestions affect the naturalness and flow of conversation between users?

RQ2: What design features optimize the balance between helpfulness and intrusiveness of AR-based guidance?









APPLICATIONS & IMPACT

Workplace Inclusion

- Empowers neurodivergent individuals to excel in customer-facing roles
- Supports employees with social anxiety through real-time guidance
- Bridges language barriers for non-native English speakers
- Reduces cognitive load for individuals with processing challenges

Training & Development

- Accelerates onboarding for new customer service representatives
- Provides consistent training standards across diverse teams
- Enables safe practice environments for skill development
- Offers immediate feedback without supervisor presence

Social Impact

- Expands employment opportunities for underrepresented groups
- Promotes workplace diversity and inclusion
- Demonstrates technology as an enabler, not a barrier

FUTURE DIRECTIONS

1. **Multi-Language Support**: Real-time translation and guidance in multiple languages, enabling global deployment across diverse markets.
2. **Personalization Engine**: Adaptive learning approach that customizes guidance based on individual user abilities, experience levels, and learning styles.
3. **Advanced Context Recognition**: Implementing multimodal analysis combining voice tone, conversation history, and behavioral patterns for more nuanced situational understanding.
4. **Extended Applications**: System adaptation for education, healthcare, and emergency services to support communication across various professional contexts.