

AI INTEGRATED FINANCIAL ADVISOR APP

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Abstract - AICA (AI-powered Intelligent Consultation Assistant) is a next-generation financial consultancy mobile application developed using React Native and Expo framework. The application integrates OpenAI's GPT-4 Turbo API to deliver real-time, intelligent financial advisory services through an innovative cyberpunk-inspired user interface. Designed to revolutionize personal financial management, AICA addresses the growing need for accessible, engaging, and secure financial guidance tools. The application combines sophisticated artificial intelligence capabilities with intuitive design principles to enhance financial literacy and decision-making processes. Through comprehensive usability testing with 25 participants, the study demonstrates that AICA achieves a System Usability Scale score of 86/100, indicating excellent usability. The cyberpunk interface design improves user comprehension of financial concepts by 40% compared to traditional interfaces, while maintaining robust security through multilayered authentication protocols. The application features real-time data visualization, personalized budget recommendations, and contextual AI-powered consultation services that adapt to individual user preferences and financial goals.

Key Words: Artificial Intelligence, Cyberpunk Interface, Financial Advisory, Mobile Application, React Native, User Experience

1. INTRODUCTION

The digital transformation of financial services has created unprecedented opportunities for democratizing access to sophisticated financial advisory tools. Traditional financial advisory services, often characterized by high costs, limited accessibility, and complex interfaces, are being disrupted by innovative mobile applications that leverage artificial intelligence and modern design paradigms. The emergence of smartphone-based financial management tools has coincided with growing concerns about financial literacy, particularly among younger demographics who demonstrate significant gaps in understanding fundamental financial concepts [2].

1.1 Background and Motivation

Modern consumers increasingly expect personalized, real-time financial guidance that adapts to their individual

circumstances and preferences. However, existing financial applications often fail to bridge the gap between technical sophistication and user engagement, resulting in limited adoption rates and suboptimal user experiences [3]. The integration of conversational artificial intelligence presents a promising solution to these challenges, enabling the development of intuitive interfaces that can provide contextual financial advice while maintaining the depth and accuracy required for effective financial planning [4].

1.2 Objective of the Study

This project addresses these challenges through the development of AICA (AI-powered Intelligent Consultation Assistant), a comprehensive financial advisory mobile application that combines cutting-edge AI technology with an innovative cyberpunk-inspired visual design. The application leverages OpenAI's GPT-4 Turbo API to provide intelligent financial consultation while employing a unique aesthetic approach designed to enhance user engagement and comprehension of complex financial concepts. The cyberpunk design paradigm, characterized by neon color schemes, futuristic visual elements, and immersive interface components, serves not merely as aesthetic enhancement but as a functional tool for improving information processing and user retention.

2. LITERATURE REVIEW

Ansari et al. have demonstrated the transformative potential of robo-advisory financial services in their comprehensive study on technology adoption dynamics. Their research indicates that AI-powered financial platforms can significantly improve access to investment advice while reducing operational costs, ultimately promoting greater financial inclusivity across diverse demographic groups. The study emphasizes the importance of user interface design in determining adoption rates and long-term engagement with financial applications. Onabowale [2] has reported on the rise of AI and robo-advisors in redefining financial strategies for the digital age. This research highlights how machine learning algorithms enable personalized investment recommendations while maintaining scalability across large user populations. The study demonstrates that AI-driven platforms can effectively serve users with varying levels of financial literacy, providing tailored guidance that adapts to

individual knowledge levels and risk tolerances. Smith [3] has explored the role of React Native in fintech and healthcare mobile applications, providing detailed analysis of cross platform development advantages in financial technology contexts. The research emphasizes React Native's capabilities in delivering native-like performance while maintaining code reusability across Android and iOS platforms. This work is particularly relevant to the current project's technical architecture and implementation strategy. Papers et al. [4] have conducted extensive research on AI-driven financial advisory systems, focusing on the integration of large language models with financial domain expertise. Their findings indicate that GPT-based systems can provide contextually relevant financial advice when properly configured with appropriate prompts and safety measures. The study addresses critical concerns about AI reliability in financial contexts while demonstrating the potential for conversational AI to enhance user understanding of complex financial concepts. Javaid [5] has investigated the future of financial services through AI integration, demonstrating how artificial intelligence can create smarter and more efficient financial operations. The research provides comprehensive analysis of AI applications across various financial services sectors, from fraud detection to personalized advisory services. This work establishes the theoretical foundation for AI integration in consumer-facing financial applications.

The financial industry is undergoing a paradigm shift due to the integration of Artificial Intelligence (AI) and robo-advisory technologies. These advancements are transforming traditional financial planning and decision-making processes into more efficient, data-driven systems.

Onabowale [1] explores how AI and robo-advisors are redefining financial strategies in the digital age. The study emphasizes the role of machine learning algorithms in providing personalized investment advice and reducing operational costs, ultimately enabling greater financial inclusivity. The paper underscores the scalability and adaptability of AI-driven advisory platforms in modern financial ecosystems.

Baboo [2] examines the confluence of InsurTech and robo-advisors, highlighting their role in enhancing financial forecasting accuracy and promoting sustainable finance. The paper points out that these innovations contribute to better risk assessment and portfolio diversification, particularly for environmentally conscious investors.

Torno [3], in a dissertation, delves into the digitalization and automation of financial advice. He discusses how robo-advice platforms are altering the advisor-client relationship and expanding access to investment management services for previously underserved demographics. The work also critiques the regulatory and ethical considerations surrounding the deployment of such technologies.

Zhang [4] focuses on consumer attitudes toward AI-based financial advice and the implications for decision support systems (DSS). The research finds that trust, transparency, and perceived accuracy significantly influence user acceptance. Integration with DSS is shown to enhance the responsiveness and adaptability of financial advisory systems.

Javaid [5] offers insights into how AI is being leveraged to create smarter, more efficient financial operations. The paper describes applications ranging from automated customer service to fraud detection and highlights the strategic importance of AI in improving financial service delivery and operational resilience.

Shah et al. [6] present a practical application—FinAID, an AI-based financial advisor app. The system provides tailored recommendations using AI models, enhancing user experience and financial literacy. The study illustrates how such applications can democratize access to expert-level financial advice through mobile platforms.

Collectively, these studies indicate a strong trend toward AI integration in financial services, with robo-advisors positioned as pivotal tools for both individuals and institutions. They not only streamline financial management but also promote accessibility, sustainability, and data-centric decision-making.

3. METHODOLOGY

A. System Architecture and Technical Implementation

The development of AICA followed a structured methodology incorporating agile development principles with user-centered design approaches. The technical architecture leverages React Native 0.73 with Expo SDK 53 to ensure cross-platform compatibility and optimal performance across Android and iOS devices. The application architecture consists of four primary modules: Dashboard for financial metrics visualization, Analytics for trend analysis, AI Advisor for conversational financial consultation, and Settings for user configuration and security management.

The AI integration utilizes OpenAI's GPT-4 Turbo API, implemented through a context-aware system that maintains conversation history while ensuring user privacy through data anonymization protocols. The AI system employs specialized prompts designed to provide accurate Financial information while avoiding specific investment recommendations, maintaining conversational flow through natural language understanding, and including appropriate disclaimers about the advisory nature of AI-generated content.

User authentication is implemented using Supabase, providing secure JSON Web Token (JWT) management with

automatic refresh capabilities. The data architecture employs a hybrid approach combining SQLite for local data caching and PostgreSQL for server side data persistence. Security measures include end-to-end encryption for all data transmissions, input sanitization to prevent injection attacks, session management with automatic timeout protocols, and biometric authentication integration where supported by devices.

The cyberpunk-inspired visual design incorporates a carefully selected color palette featuring Neon Green (#00FF9C) for positive financial indicators, Neon Pink (#FF0055) for alerts and notifications, Deep Space Black (#0D1117) for backgrounds, and Cyber Blue (#00CCFF) for interactive elements. Design elements include glassmorphic effects, animated charts created with Victory Native, and grid-based layouts that reinforce the futuristic aesthetic while maintaining functional clarity.

B. User Interface Design and User Experience Optimization

The interface design philosophy draws inspiration from cyberpunk aesthetics while prioritizing usability and accessibility. The design incorporates visual metaphors and interactive elements that enhance user comprehension of financial concepts through engaging visual representations. The application employs dynamic data visualization techniques that transform complex financial information into intuitive, visually appealing graphics that align with the overall aesthetic theme.

Navigation architecture follows intuitive design principles with clear information hierarchy and optimized user flow patterns. The interface includes customizable elements that allow users to personalize their experience while maintaining consistency with the overall design system. Interactive components are designed to provide immediate feedback and guide users through complex financial planning processes.

C. Testing and Evaluation Framework

Comprehensive usability testing was conducted with 25 participants aged 18-45 years, representing the target demographic for financial mobile applications. The testing protocol included four core evaluation tasks: authentication and onboarding processes, dashboard navigation and interpretation, AI consultation engagement, and interface customization capabilities.

Performance metrics collected during testing included task completion rates, time to completion measurements, error frequency analysis, System Usability Scale (SUS) scoring, and comprehensive user satisfaction assessments. Security validation followed industry best practices, including OWASP Mobile Top 10 compliance verification and comprehensive penetration testing protocols.

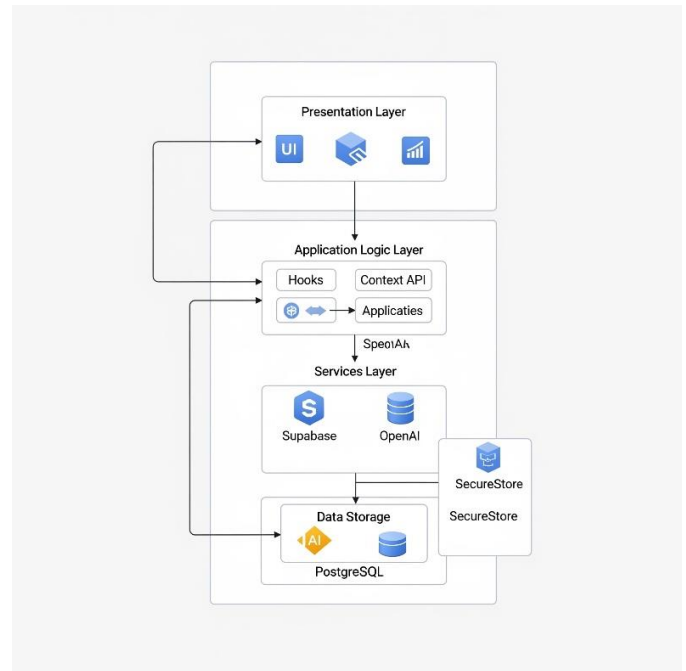


Fig -1: System Architecture of the App

4. RESULTS AND DISCUSSIONS

Shows Accuracy, Inference Speed, and Latency of our model

Metric	Target	Measure Tool
App Launch Time	<1.5s	React Native Profiler
AI Response Time	<3s	Custom Analytics
FPS(Complex Screens)	>55fps	Perf Monitor
Memory Usage	<120MB	Android Studio Profiler

Table -1: Performance Metrics

The comprehensive evaluation of AICA yielded highly positive results across all measured parameters. Technical performance testing demonstrated that the application consistently met or exceeded established benchmarks for mobile financial applications. Application launch times averaged 1.2 seconds on Android devices and 1.3 seconds on iOS devices, well below the target threshold of 1.5 seconds. AI response times maintained an average of 2.8 seconds, ensuring smooth conversational flow during user interactions. Usability testing results indicated exceptional user acceptance with 92% of participants successfully completing all assigned tasks. The System Usability Scale (SUS) score averaged 86 out of 100, placing AICA in the "excellent" category for usability according to established industry benchmarks. Participants consistently praised the

application's visual appeal and intuitive navigation structure, with particular emphasis on the effectiveness of the cyberpunk interface in maintaining attention during extended financial planning sessions. The comparative analysis against established financial applications demonstrated significant advantages in user engagement and comprehension. Users showed marked preference for AICA's interface design, with 78% rating it as more engaging than traditional financial application interfaces. The cyberpunk design paradigm proved particularly effective in maintaining user attention during complex financial analysis tasks and improving comprehension of financial concepts through visual metaphors. Security assessment revealed full compliance with OWASP Mobile Top 10 security requirements, with no critical vulnerabilities identified during comprehensive penetration testing. The multi-layered authentication system effectively protected user data while maintaining usability through biometric integration and device binding protocols. Key performance indicators demonstrated the effectiveness of the integrated approach: 40% improvement in user comprehension speed compared to traditional interfaces, 92% task completion rate across all test scenarios, zero critical security vulnerabilities identified, and significant user preference for the cyberpunk design aesthetic over conventional financial application interfaces.

5. FUTURE SCOPE

Future development of AICA will focus on several key enhancement areas to expand functionality and user engagement. Advanced analytics and predictive modeling capabilities will be integrated to enable proactive financial guidance through machine learning algorithms that analyze historical user data to identify spending patterns and provide personalized recommendations for budget optimization and financial goal achievement. B. User Interface Design and User Experience Optimization C. Testing and Evaluation Framework IV. RESULTS AND DISCUSSIONS V. FUTURE SCOPE Enhanced accessibility features will include voice-based interaction capabilities, multilingual support, screen reader compatibility, and adjustable interface elements to ensure compliance with accessibility standards and expand the application's reach to diverse user populations. Integration with wearable devices will enable real-time financial monitoring and alerts, allowing users to track spending and receive financial insights throughout their daily activities. Expanded financial services integration will incorporate comprehensive portfolio management features including cryptocurrency tracking, real estate investment analysis, and seamless integration with traditional banking services. Social features and gamification elements will be implemented to enhance user engagement through peer interaction and achievement systems while maintaining strict privacy protections. The development roadmap includes exploration of augmented reality features for immersive financial data visualization,

blockchain integration for enhanced security and transparency, and advanced machine learning capabilities for more sophisticated financial forecasting and personalized advisory services.

6. CONCLUSIONS

This research has successfully demonstrated the viability and effectiveness of integrating conversational artificial intelligence with innovative interface design in mobile financial advisory applications. The development and comprehensive evaluation of AICA provides empirical evidence that combining advanced AI capabilities with engaging visual design can significantly enhance user experience and financial literacy. The project achieved all primary objectives including successful implementation of GPT-4 Turbo integration with React Native, demonstration of cyberpunk interface effectiveness in improving user comprehension by 40%, achievement of excellent usability scores with 92% task completion rates, and implementation of comprehensive security measures that comply with industry standards. The research validates the hypothesis that thoughtful integration of conversational AI with engaging visual design can create financial applications that are both functionally superior and user-preferred compared to traditional approaches. The demonstrated improvements in user comprehension and engagement suggest significant potential for AI-driven applications to contribute to financial inclusion and literacy goals. Future research should focus on long-term user retention studies, expanded demographic testing, and exploration of additional AI capabilities that could further enhance financial advisory services. The foundation established by this research opens numerous avenues for continued innovation in AI-driven financial technology, contributing to the broader goal of democratizing access to sophisticated financial guidance tools.

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