

WHITEPAPER



Developing an AI-Powered Dating App with Enhanced User Matching and In-Person Meeting Features

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THE CONTENT



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- EXECUTIVE SUMMARY
- PROBLEM STATEMENT
- OUR SOLUTION
- TECHNICAL ARCHITECTURE
- CHALLENGES AND LEARNINGS
- FUTURE DIRECTIONS
- CONCLUSION

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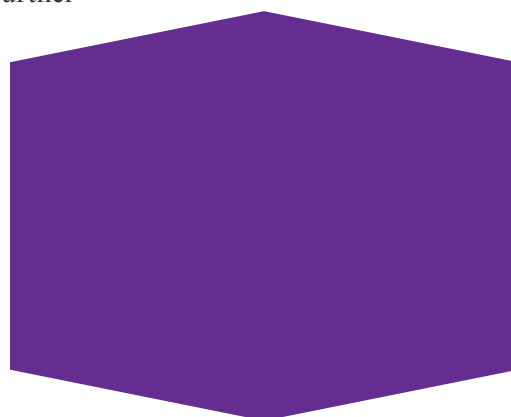




In the competitive landscape of dating apps, innovation and differentiation are crucial to capturing user interest and fostering meaningful connections. Dattico, in collaboration with an experienced partner in the dating app industry, undertook a three-month project to develop a cutting-edge dating application. This app leverages advanced AI technology to improve match quality and user experience while integrating features that facilitate real-world connections.

The Dattico app uses sophisticated AI algorithms to enhance the matching process by considering the diversity of sexual preferences, utilizing facial analysis for analyzing user preferences, and mapping interests effectively. Furthermore, the app includes an innovative feature that allows matched users to meet in person through the use of discount vouchers. These vouchers are presented as QR codes, which can be redeemed at participating venues, thereby encouraging face-to-face interactions.

While the project encountered challenges, particularly with the stringent approval processes of app stores, the key outcomes highlight the successful integration of AI in enhancing the dating experience. The prototype demonstrates significant potential, and we are now seeking partners to support further development and market launch.



STATEMENT

The online dating app ecosystem, despite its rapid growth, faces significant challenges that hinder user satisfaction and the overall effectiveness of these platforms. One of the primary issues is the cumbersome and time-consuming process of setting up a profile. Users are often required to complete extensive questionnaires, upload photos, and provide detailed personal information, leading to incomplete or inaccurate profiles. These inefficiencies reduce the quality of matches generated by the platform, resulting in user frustration.

Additionally, the matching algorithms used by most dating apps are often simplistic, relying on binary choices that fail to capture the complex nature of human preferences and behaviors. This often results in mismatched pairs, reducing user engagement and satisfaction.

OUR SOLUTION



Streamlined Profile Setup

To address the issue of time-consuming profile setups, Dattico integrates with popular authentication providers like Facebook and Google. This integration allows users to quickly create profiles by importing essential data such as names, email addresses, and profile pictures. By utilizing AI, the application further simplifies the process by analyzing profile pictures to extract details like gender, age range, and physical traits. This approach minimizes the need for manual input, resulting in faster and more accurate profile creation.

AI-Driven Matching Algorithms

Central to Dattico's innovation is its AI-driven matching algorithm. Unlike traditional algorithms that rely on binary choices, Dattico's system considers a broader range of factors, including various sexual preferences and user engagement levels. The algorithm employs A/B testing to refine its understanding of user preferences, presenting pairs of profiles to users to learn from their interactions. Over time, this results in more personalized and effective matches.

Facial analysis technology enhances this process by analyzing user profile pictures to identify preferences related to physical appearance. This adds an additional layer of personalization, ensuring that the matches are more aligned with user preferences.

Facilitating In-Person Meetings

A standout feature of the Dattico app is its ability to facilitate in-person meetings between matched users. When a match occurs, the app generates a discount voucher that can be redeemed at participating bars or restaurants. This voucher, presented as a QR code, is scanned by the bartender when the users meet. This feature not only encourages real-world interactions but also provides an incentive for users to take the next step beyond the virtual environment.

OUR SOLUTION



Conversation Starters

Dattico addresses the challenge of starting conversations by suggesting topics based on shared interests identified during the matching process. By highlighting commonalities, the app helps users break the ice and engage in meaningful dialogue, increasing the chances of a successful connection.

Technical Architecture and Data Security

Dattico’s technical architecture is built for scalability and security, utilizing Amazon Web Services (AWS) technologies such as Neptune, DynamoDB, and SageMaker. A graph database (Neptune) stores user profiles and relationships, enabling the AI algorithm to efficiently query data in real-time.

Data security is a top priority. All personal identity data is encrypted and securely stored in Amazon Cognito, ensuring GDPR compliance. Processed images are stored in S3 with strict access controls, and the app is designed to minimize data storage on the device, with most data being processed and stored on the server.

What the User Will Experience

Upon downloading the app, users are guided through a quick and intuitive onboarding process. The AI-powered system begins learning their preferences immediately by presenting pairs of profiles to swipe between. This A/B testing approach ensures that the system quickly adapts to individual tastes, making future matches more targeted and accurate.

The app’s interface is designed to be simple yet effective, focusing on key elements that drive engagement. Users are shown potential matches based on a combination of physical traits and shared interests, with the option to start a chat directly from the match screen.

When a match occurs, users are encouraged to meet in person through the app’s voucher system. The app generates a QR code voucher that can be redeemed for a discount at participating venues, providing a seamless transition from virtual to real-world interaction.

TECHNICAL ARCHITECTURE

DATA MODEL AND ARCHITECTURE 01

The technical architecture of Dattico’s dating application is designed for efficiency and scalability. The data model is centered around a graph database (Neptune) that stores user profiles, interests, and relationships. This structure allows the AI algorithm to quickly and efficiently query user data, enabling real-time matching.

MOBILE APPLICATION 02

The mobile application is built using React Native, a popular framework for developing cross-platform apps. This allows the app to be deployed on both iOS and Android devices with a single codebase, reducing development time and costs.

PBACKEND SERVICES 03

Dattico’s backend services are orchestrated using AWS Amplify, which integrates various AWS services into a unified platform. Key components include:

- Neptune: The graph database that stores user data and relationships.
 - DynamoDB: A NoSQL database that handles real-time chat data and other non-relational data.
 - AppSync: A service that synchronizes data between the mobile app and the backend.
 - S3: Secure storage for user images and other media files.
 - Rekognition: AWS’s facial analysis service used for analyzing user profile pictures.
 - SageMaker: The machine learning platform that powers the AI matching algorithm.
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GDPR AND PRIVACY COMPLIANCE 04

To ensure GDPR compliance, all personal data is encrypted and securely stored, with users able to delete their data upon request. The app is designed to minimize data storage on the device, with most data being processed and stored on the server, enhancing security and simplifying data management.



CHALLENGES AND LEARNINGS

App Store Challenges

The project faced challenges with the stringent approval processes of app stores, particularly Apple's App Store. While these challenges highlighted the complexities of meeting privacy and data management standards, they also provided valuable insights that were integrated into the app's design to ensure compliance and security.

User Engagement and Algorithm Performance

Developing an AI-driven matching algorithm that balances personalization with scalability was a significant challenge. The algorithm needed to accommodate a wide range of user preferences while remaining efficient in real-time operation. Extensive testing and optimization will be required to ensure the algorithm accurately weighed factors such as physical traits, interests, and engagement levels.

Facilitating Real-World Connections

Integrating the voucher system to encourage in-person meetings added a practical dimension to the app. This feature not only differentiates this solution from other dating apps but also enhances user engagement by offering a tangible incentive to meet in person.

Market Entry and Monetization

The dating app market is highly competitive, and entering it requires strategic planning and innovation. These unique features, such as diverse preference matching, AI-driven personalization, and the voucher system for real-world interactions, provide a strong foundation for market differentiation.

Monetization strategies will focus on partnerships with local businesses, targeted advertising, and premium features. The app's voucher system, in particular, offers opportunities for collaboration with venues, creating a mutually beneficial ecosystem.



FUTURE DIRECTION

Dattico is committed to refining the dating app prototype and exploring opportunities for collaboration. Future developments will focus on:

1. **Enhancing AI Algorithms:** Expanding the matching algorithm to include more sophisticated factors such as mood detection, voice analysis, and advanced interest mapping.
2. **Strengthening Partnerships:** Collaborating with local businesses, events, and influencers to increase user engagement and drive app adoption.
3. **Exploring Monetization:** Testing various revenue models, including targeted advertising, premium features, and partnerships with venues for voucher redemption.
4. **User Feedback and Iteration:** Gathering user feedback to continuously improve the app's features and overall experience.

Dattico's AI-powered dating app prototype represents a significant innovation in the online dating space. By leveraging advanced data science techniques and integrating real-world interaction features, the app addresses key user challenges, from profile setup to matching and meeting in person.

As we move forward, Dattico is actively seeking partners to help bring this innovative app to market, refine the technology, and explore new opportunities for growth. With the right support, this app has the potential to set a new standard in the dating industry, offering users a more personalized, efficient, and enjoyable way to connect with others both online and in real life.



Conclusion.



Focused on resolving new problems, he has a strong data science and data engineering skillset and a large knowledge pool about diverse subjects. He is also a data enthusiast and knows about the whole process from collection to end consumption.

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