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Optimizing Profile Matching in Matrimonial Platforms

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Abstract: *Matrimonial platforms have revolutionized how individuals seek life partners by offering vast databases and sophisticated filters. However, traditional systems often fail to deliver relevant matches due to poor filtering logic and lack of personalization. This paper presents "Matchify", a modern matrimonial platform optimized with AI-powered profile matching, multi-factor filters, and an intuitive chat system. Using Java EE, Hibernate, and MySQL, the system integrates stored procedures for performance and leverages personalized matching algorithms. The result is a more accurate and user-friendly platform that enhances user satisfaction and match success rate*

Keywords: Matrimonial, Profile Matching, AI, Filters, Hibernate, Stored Procedure, Matchify, Java EE, MySQL, Chat System

I. INTRODUCTION

The concept of matchmaking has evolved from traditional family-arranged alliances to modern digital platforms. In the Indian context, matrimonial websites play a crucial role in connecting individuals based on preferences such as caste, religion, profession, and education. However, despite the availability of numerous platforms, users often face challenges like irrelevant matches, outdated information, and lack of real-time interaction. To address these issues, we developed Matchify, an intelligent matchmaking system that leverages AI-powered matching algorithms, real-time chat, and customizable filters. The system aims to deliver accurate matches while enhancing user experience through a modern, responsive user interface and robust backend architecture.

II. LITERATURE REVIEW

Several studies and platforms have addressed the concept of matchmaking using various techniques ranging from rule-based systems to machine learning models. Traditional matrimonial websites such as Shaadi.com, Jeevansathi.com, and BharatMatrimony use basic filters (age, caste, religion) and keyword-based search to match users. However, these systems lack advanced personalization and real-time communication.

Research by [1] explored compatibility matching using psychological profiling, while [2] proposed collaborative filtering methods for better accuracy. These approaches, while effective, often require large datasets and intensive computation. Moreover, many existing systems do not consider cultural and social nuances specific to Indian matrimonial contexts.

Modern matchmaking applications like Tinder and Bumble introduced swiping-based UIs and location filters, but they are not tailored for serious matrimonial purposes. Recent advancements have focused on AI integration, yet there's limited literature addressing a hybrid approach combining rule-based filtering, user preferences, and real-time interaction in a matrimonial context.

III. EXISTING SYSTEM

Existing matrimonial platforms such as Shaadi.com, Jeevansathi.com, and Bharat Matrimony provide users with basic profile creation, filtering options, and match suggestions. These platforms allow filtering based on parameters like age,

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religion, caste, location, and education. While these filters help in narrowing down options, the systems often fall short in delivering highly relevant matches due to the lack of advanced personalization.

Most existing systems:
- Rely heavily on user-input keywords or fixed rule-based filters.
- Do not incorporate real-time interaction like chat features until a match is confirmed.
- Lack dynamic match scoring or AI-based compatibility metrics.
- Provide limited options for users to update their preferences dynamically.

Additionally, the backend implementations are often not optimized for speed or efficiency, especially when handling large datasets. Queries are mostly direct SQL statements without stored procedures or batch operations, leading to potential performance bottlenecks.

IV. PROPOSED SYSTEM

The proposed system, Matchify, is an advanced matrimonial platform that addresses the limitations of existing systems by introducing intelligent matching, rich filtering, and real-time communication features. It is designed to be user-friendly, scalable, and optimized for high-performance matchmaking.

Key features of the Matchify system include:

Smart Profile Matching
- A custom-built MatchMaker engine compares multiple parameters such as age, caste, education, income, height, marital status, and job location.
- Compatibility is calculated using a dynamic match score.

Multi-Criteria Filtering System
- Users can filter potential matches by applying multiple preferences simultaneously.
- Filters are dynamic and adjustable.

Stored Procedures for Performance
- Complex operations are handled using MySQL stored procedures for better speed.

Modern UI & Multi-Step Registration
- Clean JSP-based UI with section-wise forms and a responsive layout.

Real-Time Chat Integration
- Users can chat directly via the matches.jsp interface.

Modular Backend Architecture
- Built using Java EE with layered architecture and Hibernate for ORM.

V. SYSTEM ARCHITECTURE

The architecture of the Matchify platform follows a layered MVC (Model-View-Controller) pattern with a clear separation of concerns. The application is built using Java EE, Hibernate ORM, and MySQL, and is deployed on Apache Tomcat 10.

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Layers:

1. Presentation Layer (JSP + HTML + CSS)
2. Controller Layer (Servlets)
3. Service Layer
4. DAO Layer (Hibernate)
5. Database Layer (MySQL + Stored Procedures)