MoveEase

AI and Machine Learning based application for people relocating within India for work

Presented By

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GitHub link:

https://github.com/Tanaya006/MoveEase-Prototype

Problem Statement:

Relocating for work, especially across cities or regions within India, presents a variety of challenges for professionals. The main pain points include finding suitable housing, adjusting to a new cost of living, and identifying trustworthy local services, all while managing tight work schedules and settling into a new environment. Professionals frequently struggle with the lack of centralized resources, leading to the need to consult multiple platforms for different aspects of relocation from housing to transportation, utilities, or local service providers. This fragmented approach can result in inefficiencies, confusion, and a prolonged transition period. Moreover, finding reliable housemates for shared accommodations or negotiating housing terms can be time- consuming and stressful, especially for those unfamiliar with the area. Further complicating the move is the need for additional services such as furniture rentals, house cleaning, and setting up essential utilities like Wi-Fi, TV, plumbing, and electrical work. In many cases, the lack of personalized advice or guidance leaves employees feeling overwhelmed, disconnected, and unsupported as they adjust to their new surroundings.

This app will address these problems by offering a comprehensive, one-stop platform for professionals moving within India. It simplifies the relocation process by providing housing search with local broker assistance, housemate evaluation, and access to essential services like utilities and local service providers. Premium support services such as maid, rented furniture, and repair contacts further ease the transition, ensuring that users feel informed, connected, and supported throughout their move.

This platform aims to provide a seamless, efficient, and hassle-free relocation experience, helping professionals settle into their new environment with confidence and ease.

Market Analysis:

India has seen a sharp rise in the number of professionals relocating to different cities due to career opportunities in sectors such as technology, finance, education, healthcare, and more. Major cities like Bengaluru, Hyderabad, Pune, Gurgaon, and Chennai are emerging as top relocation destinations for professionals across the country. Traditionally, professionals have had to rely on a combination of real estate agents, local brokers, housing websites, and word-of-mouth recommendations to secure housing. However, these methods are often disjointed and lack transparency, leaving individuals with limited options and sometimes unreliable information.

With the rise in mobility and the growing demand for professional, tech-driven solutions, there is a clear market opportunity to launch a service that caters specifically to professionals relocating across India—offering them not just a house, but a complete relocation experience. By addressing the challenges of fragmentation, lack of personalization, and the need for a seamless transition, such a platform can become an

essential tool for relocating professionals and a trusted resource for corporates managing employee relocations.

Product Introduction:

India's fast-growing job market has led to a surge in professionals relocating to cities like Bengaluru, Hyderabad, Pune, and Gurgaon in search of better career opportunities. However, the current relocation experience is often fragmented, relying on a mix of brokers, property websites, and personal networks—leading to limited transparency, outdated listings, unreliable housemate options, and poor personalization.

Our AI and ML-powered application offers a seamless, all-in-one solution tailored for professionals relocating within India. The platform provides personalized housing recommendations based on user preferences and real-time market trends, AI-driven housemate matching based on compatibility scores, smart notifications for listings and services, dynamic rent pricing insights, and sentiment analysis of user reviews to support better decisions. Users also get access to verified local agents who provide hands-on assistance with neighbourhood insights, documentation, and setup services. Whether it's a young graduate seeking affordable shared accommodation, a mid-career professional relocating with family and school needs, a remote worker looking for short-term rentals and workspace access, or a corporate client managing bulk relocations, our platform is built to serve all.

For users seeking more hands-on support, premium subscribers gain access to local broker assistance—where AI suggests brokers by location and property type, and users can directly communicate with brokers for negotiation and viewings. The platform also connects users with local service providers such as electricians, cleaners, and plumbers, offering AI-sorted results based on location and reviews. Property and roommate reviews with sentiment analysis are integrated to help users make informed decisions, while predictive alerts notify users about new listings, payment due dates, and service availability. Secure payments are facilitated through encrypted channels, and premium users benefit from additional customer support for payment-related concerns.

The app balances automation and human assistance through a tiered model—free users enjoy core features like onboarding, recommendations, roommate matching, and secure transactions, while premium users unlock human support, broker interactions, detailed service coordination, and dispute handling. Multi-channel in-app communication further enhances usability, allowing all users to message contacts within the platform while reserving agent-level access for subscribers. This hybrid model ensures a smooth, tech-driven relocation journey, personalized to user needs and scalable across all major Indian cities.

Business Need Assessment:

Market Dynamics:

- **Urbanization & Workforce Mobility**: Rapid urban growth in Tier-1 and Tier-2 cities (e.g., Bengaluru, Hyderabad, Pune) is fuelling job-driven relocation. According to industry reports, over 50 million people relocate within India annually, with a large portion being working professionals.
- **Rising Gig & Remote Workforce**: Freelancers, digital nomads, and remote employees are increasingly in need of short-term, flexible housing and shared accommodations. Hybrid work culture post-COVID has amplified the demand for co-living spaces with high-speed internet and essential services.
- **Tech-Enabled Real Estate**: Platforms like NoBroker, NestAway, and MagicBricks offer property listings, but lack end-to-end relocation features, local service integrations, and AI-powered roommate matching. AI/ML integration in real estate (recommendations, pricing, sentiment analysis) is emerging but still underutilized in the Indian context.

Challenges in the Market

- Fragmented Services: Existing solutions are scattered across multiple platforms, making it difficult for users to find all the necessary services in one place.
- Lack of Personalization: Most services are not tailored to the specific needs of individuals relocating for work. There is a gap in offering personalized advice on neighborhoods, housing, and other factors based on an individual's lifestyle and preferences.
- Trust and Transparency Issues: While housing and local service providers are numerous, users often face challenges with reliability, transparency in pricing, and the quality of services provided.
- Time Sensitivity: Professionals are often on tight schedules and require quick solutions to secure housing, set up utilities, and arrange for other services, making the relocation process more stressful and time-consuming.

Market Opportunity:

The relocation market in India is ripe for a comprehensive, all-in-one platform that simplifies the relocation process, combining housing search, housemate matching, local services, and additional support tools. The integration of city comparisons, local insights, and a curated list of trusted service providers presents a significant opportunity to fill the gaps left by existing solutions. With the rise in mobility and the growing demand for professional, tech-driven solutions, there is a clear market opportunity to launch a service that caters specifically to professionals relocating across India, offering them not just a house, but a complete relocation experience. By addressing the challenges of fragmentation, lack of

personalization, and the need for a seamless transition, such a platform can become an essential tool for relocating professionals and a trusted resource for corporates managing employee relocation.

Business Requirements:

- **Comprehensive Relocation Solution:** The platform should be able offer an end-to-end solution that combines housing search, housemate matching, broker assistance, and access to local services in a unified app experience.
- **AI & ML Integration:** The system should utilize machine learning algorithms for personalized recommendations, dynamic pricing, user sentiment analysis, and compatibility-based housemate matching to enhance user experience and efficiency.
- **Scalable Subscription Model:** The business must support both free and premium users, with a subscription-based revenue model offering monthly or quarterly plans. Premium features should include live broker chat, early access to listings, and personalized support.
- **Verified Partner Network:** The platform must maintain a verified network of brokers, agents, and service providers (e.g., movers, cleaners) across all major cities, ensuring high service quality and reliability.
- **User Data Security & Compliance:** The business must implement secure data handling practices including encryption, user consent, and compliance with relevant data protection laws (e.g., GDPR-like standards in India).
- **Real-Time System Capabilities:** The platform must support real-time updates for listings, notifications, chats, and service availability to provide a smooth, up-to-date user experience.

Key Features:

- **Personalized Housing Recommendations**
  Using AI to match users with affordable, flexible housing options based on their budget, location preference, and lifestyle.
- **Housemate Matching**
  AI matches users with compatible housemates by analysing personality traits, habits, and preferences to ensure peaceful co-living.
- **Local Agent Support**
  Connect users with trusted local agents who provide area-specific insights, help with paperwork, and offer support during the move.
- **Smart Notifications**
  Push alerts for new listings, price drops, and important reminders like lease renewals and utility payments.

Target Audience:

- **Young Professionals & Fresh Graduates:** They has needs like Affordable, flexible housing options like shared accommodations; quick house-hunting tools; access to utilities and local services. This group often faces budget constraints and a lack of familiarity with new cities, making it challenging to find affordable housing.
- **Mid-Career Professionals:** Relocating with a family can be stressful, especially in terms of managing children's school placements and finding reliable services. Mid-career professionals tend to look for high-quality, larger housing that suits family needs. High-quality housing in family-friendly neighborhood; premium services (maid, furniture rentals); seamless relocation support for families (schools, transportation).
- **Corporate Clients / Companies:** Corporate clients require a streamlined, efficient solution for managing employee relocations. They need a centralized platform that handles bulk relocation requests, providing employees with housing, utilities, and local service support. The process can be time-consuming, lack of consistency in services, managing multiple relocations at once. They look for housing, utility, and service management in one platform.
- **Remote Workers / Freelancers:** Remote workers and freelancers are looking for flexible, affordable housing solutions, especially short-term rentals, or shared living spaces. They need easy access to co-working spaces and networking opportunities. A mobile-friendly platform for housing and service setup is crucial, as is ensuring reliable internet and home office solutions to support their work.
- **Expats and NRIs (Non-Resident Indians):** Expats and NRIs typically seek luxury housing in prime, well-connected locations. They prefer concierge-level services for cultural adaptation, including local insights and assistance. High-end services like furniture rentals, maid services, and personal assistants are often required to ensure a comfortable transition. They also need a seamless relocation process that handles all aspects of settling in.

User Need:

- **Accessibility:** Offline functionality, multi-device compatibility, and support for diverse languages.
- **Customization:** Tailored alerts and updates based on availability.
- **Cost-Effectiveness:** Affordable pricing models for small and large-scale Housing.

External Research:

House recommendation system

https://www.kaggle.com/datasets/sayeedmohammad/house-rent-in-indian-cities-and-localities

2. Roommate Matching System

https://www.flatmate.in/city/pune

https://www.nestaway.com/

3. Recommendation Systems

https://www.analyticsvidhya.com/blog/2021/07/recommendation-system-understanding-the-basic-concepts/

ML MODEL DEVELOPMENT

A house recommendation system is designed to help users find rental properties that best match their personal preferences and lifestyle. It works by first collecting user inputs such as budget, preferred location, amenities (like Wi-Fi, AC, or meals), and the number of roommates. These inputs, along with data from available properties, are converted into numerical features. The system then compares the user's profile with the properties using similarity-based methods (like cosine similarity or Euclidean distance) or clustering techniques to identify the most compatible options. Finally, it ranks and recommends the top matching houses to the user, making the search process faster, easier, and more personalized.

House Recommendation System

Step 1: Data Collection

User Data: Preferences like budget, location, amenities, number of roommates, cleanliness, work hours, etc.

House Data: Attributes like city, rent, area, rooms, furniture, animal allowance etc.

Step 2: Data Preprocessing

1. **Handle Missing Values:** Impute or drop missing data.
2. **Convert Categorical Data:**

- Use one-hot encoding (e.g., location, furnishing).
- Map ratings/preferences to numerical scale.

3. **Normalize/Standardize:** Scale numeric features (rent, rooms) using MinMaxScaler or StandardScaler.

Step 3: Model Selection

Building the content-based housing recommendation system model

A content-based housing recommendation system uses machine learning to suggest homes that match a user's preferences. It turns both user preferences and housing features into vectors (numerical representations). Then, it compares these vectors using distance or similarity measures, like cosine similarity or Euclidean distance. Houses with vectors closest to the user's preference vector are recommended. This way, the system finds the most relevant homes based on the features the user likes.

A content-based housing recommendation system is designed to suggest properties to users based on their individual preferences and the features of available listings. It works by first creating a profile of the user's likes and dislikes, either through direct input or by analysing their interactions with previous listings. The system then evaluates the attributes of various housing options—such as location, price, number of bedrooms, amenities, and type of property—and compares them to the user's profile using similarity measures. Based on this comparison, it recommends properties that closely match the user's preferences. Unlike collaborative filtering, which relies on the behaviour of other users, content-based filtering focuses solely on the specific user's tastes, making it especially effective for personalized and relevant housing suggestions.

Step 4: Filtering

The system also applies business or user-defined constraints—such as price range, preferred locations, and number of rooms—to ensure that recommendations meet the user's practical needs as well as their preferences.

The system applies user-defined filters like price range, location, and number of rooms—and can include as many filters as needed—ensuring recommendations match both practical needs and personal preferences.

Housemate Matching System

Step 1: Define the Problem and collect the Data

The first step in building a housemate matching system is to clearly define the problem and the dataset requirements. The main goal is to match people based on similarities in their

preferences, habits, and lifestyles. To do this effectively, you need to collect relevant data from each person, including details like their sleeping habits (whether they are early birds or night owls), cleanliness level, social tendencies (introverted or extroverted), smoking status, work schedule, interests or hobbies, noise tolerance, and budget.

Step 2: Preprocessing

Since many of these features are categorical or qualitative—for example, smoking status or social habits—they need to be converted into numerical values to be usable by the model. Techniques like one-hot encoding or scaling ordinal features can be applied to transform this data appropriately. After encoding, the data is normalized or scaled, using methods such as Min-Max scaling or standardization, to ensure that all features contribute equally when calculating similarities.

Step 3: Building Model based on Cosine Similarity Matrix and K-Means clustering

compute the cosine similarity between every pair of feature vectors to measure how similar each person is to others based on their preferences. Using these similarity scores, create a similarity matrix that captures all pairwise comparisons. Following this, apply a clustering algorithm like K-Means to group similar individuals into clusters, which helps to identify groups of compatible housemates. When a new person enters the system, convert their preferences into a feature vector, normalize it in the same way, and determine which cluster they belong to. Recommend potential housemates by selecting those in the same cluster with the highest cosine similarity scores to the new user

Broker Recommendation Engine (For Premium Users Only)

The broker recommendation engine was built by representing each broker's attributes—such as location, specialization, active status, rating, average response time, contact methods, and languages spoken—as features. User preferences or requirements (e.g., desired location, type of housing, preferred contact method, language, minimum rating, and response time) are collected and transformed into a comparable profile. The system then calculates similarity or matches between user preferences and broker attributes, filtering out inactive brokers and applying constraints like minimum rating or preferred languages. Brokers that best match the user's needs and constraints are ranked and recommended, helping users find the most suitable brokers efficiently.

Product Prototype

This system leverages mobile-cloud architecture and AI-driven content-based recommendation models to provide an end-to-end solution for personalized housing suggestions. Users interact through a mobile app where they input their housing preferences or interact with listings they like. This data is sent to the cloud, where powerful AI analyses user preferences alongside property features stored in a centralized database. The AI matches and ranks housing options based on similarities to user preferences and filters like price, location, and room count. The recommended listings, complete with detailed information, are sent back to the user's mobile device in a clear and user-friendly format.

This cloud-based approach enables real-time, scalable, and personalized housing recommendations accessible on any smartphone.

1. User Registration & Preference Collection

The user starts by creating an account and providing their housing preferences. These may include preferred locations, budget, number of rooms, property type, and any specific needs like furnished housing or proximity to work. For users interested in broker recommendations, additional inputs like preferred contact method, languages spoken, and broker specialization are collected.

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2. Subscription for Premium Access (Broker Recommendations)

To access broker recommendations, the user must purchase a premium subscription. This step unlocks additional features in the app, including access to broker profiles tailored to the user's needs. Non-premium users can still access property recommendations but won't be shown broker matches.

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3. User Profile Vectorization

Once preferences are submitted, the system transforms them into a structured numerical format called a vector. One vector represents housing needs, and if the user is premium, another vector is created for broker-related preferences. These vectors allow the system to mathematically compare the user's needs with available listings and broker profiles.

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4. Data Preprocessing (Property & Broker Data)

The system processes the property listings and broker profiles to extract relevant features. For properties, this includes price, location, number of rooms, and type. For brokers, features like specialization, service area, languages spoken, active status, rating, and response time are captured. These are also turned into vectors to enable comparison.

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5. Apply User Filters (Constraints)

Filters are applied to remove listings and brokers that don't meet essential user-defined conditions. For housing, this could be removing properties outside the price range or wrong number of rooms. For brokers, filters ensure only active brokers with matching language and contact method preferences are considered—this step applies only to premium users.

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6. Similarity Scoring

The system compares the user vectors to the listing and broker vectors using similarity measures like cosine similarity or Euclidean distance. This step ranks how closely each property or broker matches the user's preferences, forming the basis of the recommendation.

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7. Ranking & Recommendation

The system sorts the property and broker options based on similarity scores. For every user, the top-matching properties are selected. For premium users, the top-ranked brokers who closely match the user's preferences and filters are also selected.

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8. Result Generation

A final set of personalized recommendations is generated. For all users, this includes a curated list of property listings with relevant details. For premium users, an additional list of recommended brokers is included, showing profiles with ratings, contact info, and specialization areas.

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9. Delivery of Recommendations

The results are displayed to the user via the mobile app or web interface in a clean and intuitive format. Property listings come with photos, details, and contact options. Premium users also receive broker profiles with actionable buttons to call, chat, or email directly through the platform.

BUSINESS MODEL

Monetization Strategy

The housing and broker recommendation system leverages a multi-tiered monetization model to serve a wide range of users, including renters, homeowners, students, and property brokers:

1. **Freemium Model**
   Basic housing recommendations and housemate matching are available for free, enabling user acquisition and platform engagement without initial cost barriers.
2. **Premium Services**
   Subscription unlocks broker recommendations, verified service providers (Movers and Packers, Electrician, Plumbers, Wi-Fi provider, Local Maids, etc) in the local areas,

priority listings, and advanced filters (e.g., rent trends, language/contact preferences, lifestyle compatibility, etc.).

Subscription Plans

1. **Individual Plans**
   Affordable monthly and yearly options for individual users needing access to personalized broker matching and verified service providers in local area listings.
2. **Broker/Agent Plans**
   Brokers can subscribe to promote listings, appear in recommendations, and connect directly with users via premium placements.
3. **Enterprise Plans (Real Estate Agencies & Co-Living Startups)**
   Bulk listing tools, analytics dashboards, API access, and branded profiles for larger firms and organizations managing multiple properties.

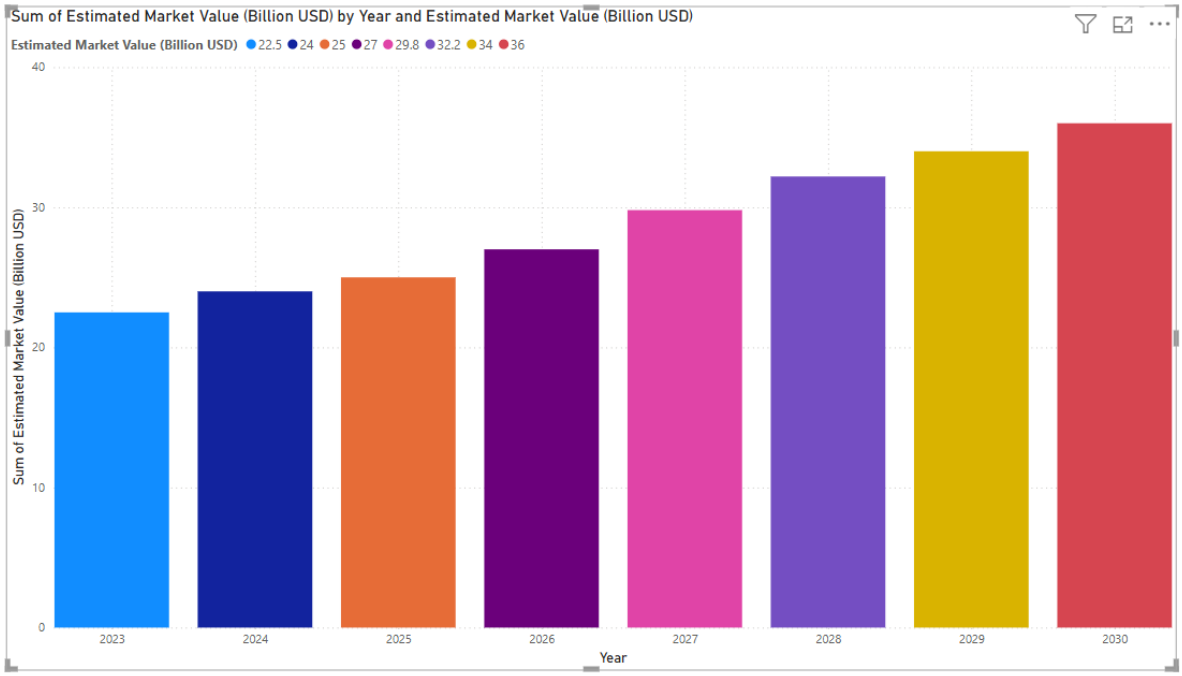
Advertising & Sponsored Listings

Revenue is generated through:

- **In-App Advertisements**: Display ads from relevant categories such as movers, packers, rental insurance, and home décor brands are shown to free and non-premium users, generating revenue through impressions and clicks.
- **Targeted Ads**: External brands (e.g., utility providers, furniture rental companies, internet providers) can run interest-based ads targeting users actively looking for housing solutions.
- **Sponsored Broker Profiles**: Brokers can pay for profile boosting to appear higher in search results and recommendation feeds.
- **Boosted Property Listings**: Property owners or agents can promote specific listings for increased visibility among relevant users.
- **Content Sponsorships**: Real estate brands can partner to sponsor blog posts, tips, or educational content inside the app, targeting renters and homeowners.

Market Forecast (Indian Rental Housing Sector)

Market Forecast Values – Urban Housing/Rental Market Size (India):



The urban rental housing market is expected to grow steadily, with rising urbanization, tech migration, and co-living trends.
CAGR (2025–2029) ≈ 7.96%, indicating strong growth potential.

Financial Equation (Assumed)

Product Pricing & Operational Cost

- **Premium Subscription Price**: ₹500/month
- **Operational Cost**: ₹50,000/month (includes server, marketing, and personnel costs)

Market Penetration Strategy

- Market Size (in value) × Penetration Percentage = Total Paying Users
- Starting at **0.005%** penetration in 2025, scaling up to **0.05%** by 2029

Revised Financial Equation

Monthly Revenue Formula:

Revenue (₹) =500x−50000\text {Revenue (₹)} = 500x - 50000Revenue (₹) =500x−50000

Where x = Number of premium subscribers/months

Revenue Projections

Year	Market Value (Billion USD)	Penetration (%)	Subscribers (Million)	Revenue (Million ₹)
2025	25.0	0.005%	0.00125	₹0.575M
2026	27.0	0.01%	0.0027	₹1.3M
2027	29.8	0.02%	0.00596	₹2.93M
2028	32.2	0.03%	0.00966	₹4.78M
2029	34.0	0.05%	0.017	₹8.45M

Example Calculations

For 2025:

- Subscribers = 25B × 0.005% = 0.00125M = 1,250 users
- Revenue = (500 × 1,250) − 50,000 = ₹575,000

For 2029:

- Subscribers = 34B × 0.05% = 0.017M = 17,000 users
- Revenue = (500 × 17,000) − 50,000 = ₹8,450,000

Insights & Recommendations

- **Growth Opportunity**: A 7.96% CAGR presents a strong expansion window. Early market capture in cities like Pune, Bangalore, and Hyderabad is key.
- **Break-even Point**:
  500x − 50,000 = 0
  → Break-even at **100 premium subscribers/month**
- **Scaling Tip**: Partner with universities, IT companies, and co-living startups for bundled offerings and rapid onboarding.
- **Risk Note**: Platform must maintain quality and trust in recommendations to sustain conversion and retention.