

A Rental Risk Analysis System for Students and Families Seeking Accommodation

A.Agesta Jenifer*, K.Varun Krishna**

*Student, Department of Computer Science, Holy Cross Engineering College Tuticorin, Tamil Nadu, India

Email: agestajenifer@gmail.com

**Student, Department of Computer Science, SNS College of Technology, Coimbatore, Tamil Nadu, India

Email: varunkrishna510@gmail.com

Abstract:

Finding rental accommodation is a significant challenge for students moving to a new city for college, for families relocating for work, and for anyone who lacks the local network of contacts that makes safe, fair rental arrangements more accessible. Rental fraud, unfair agreement terms, unsafe localities, and landlords with a history of disputes are all real risks, but they are difficult to assess without reliable, structured information. RentSafe is a proposed mobile application that aggregates multiple risk signals owner identity verification, rental agreement clause analysis, locality safety scoring, and crowd-sourced tenant reviews into a single risk rating and advisory report for any rental property a user is considering. This paper discusses the rental risk problem in the Indian context, reviews the information sources currently available to prospective tenants, presents the proposed system architecture and risk-scoring algorithm, and discusses the practical and legal considerations involved in building such a tool.

Keywords — *Rental Risk Analysis, Accommodation Safety, Tenant Protection, Rental Fraud Detection, Agreement Clause Scanner, Locality Risk, Crowd-sourced Reviews, Student Housing*

I. INTRODUCTION

Every year, large numbers of students across India relocate to cities they have never lived in before in order to attend college, and many of them are searching for a place to stay with very limited local knowledge, no established network of contacts in the city, and often under time pressure. The rental market they enter is largely informal listings on portals like OLX, NoBroker, or 99acres, agents who charge significant commissions and may not have the prospective tenant's interests at heart, and a legal framework that, while it exists, is not practically

accessible to someone trying to assess a potential room within a few days of arriving.

The risks are real and varied. Rental fraud, in which an ad is placed for a property the poster does not own or that does not exist at all, is a documented problem on online listing platforms, and victims are typically students or recent migrants who are less familiar with local market norms and more likely to make quick decisions under pressure. Beyond outright fraud, the more common problem is information asymmetry: a landlord knows the history of the property, the neighbourhood, the

neighbours, and the terms of the agreement in detail; the prospective tenant knows almost none of this.

RentSafe is designed to reduce this information asymmetry. Rather than replacing the rental search process, it sits alongside it as a due-diligence tool: a user inputs the details of a property they are already considering, and the app aggregates available risk signals owner verification status, agreement clause analysis, locality safety information, and what previous tenants have said about this address or landlord into a structured risk report and rating that helps the user make a more informed decision.

The remainder of this paper is organized as follows. Section II reviews the rental information ecosystem available to tenants. Section III presents the proposed system architecture. Section IV describes the risk-scoring algorithm. Section V discusses advantages and applications. Section VI outlines challenges and limitations, and Section VII concludes with directions for future work.

II. RELATED WORK AND EXISTING INFORMATION ECOSYSTEM

Numerous Online listing platforms such as NoBroker, 99acres, and Magicbricks have substantially improved the discoverability of rental properties over the last decade and have made it possible to search by location, price, and property type from anywhere. However, these platforms are primarily designed as discovery tools for landlords and as marketplaces for agents; their incentive structure is oriented toward facilitating listings and connecting parties rather than toward helping the tenant assess the risk of any specific listing. User

reviews on these platforms, where they exist at all, are not verified and are relatively sparse for individual properties.

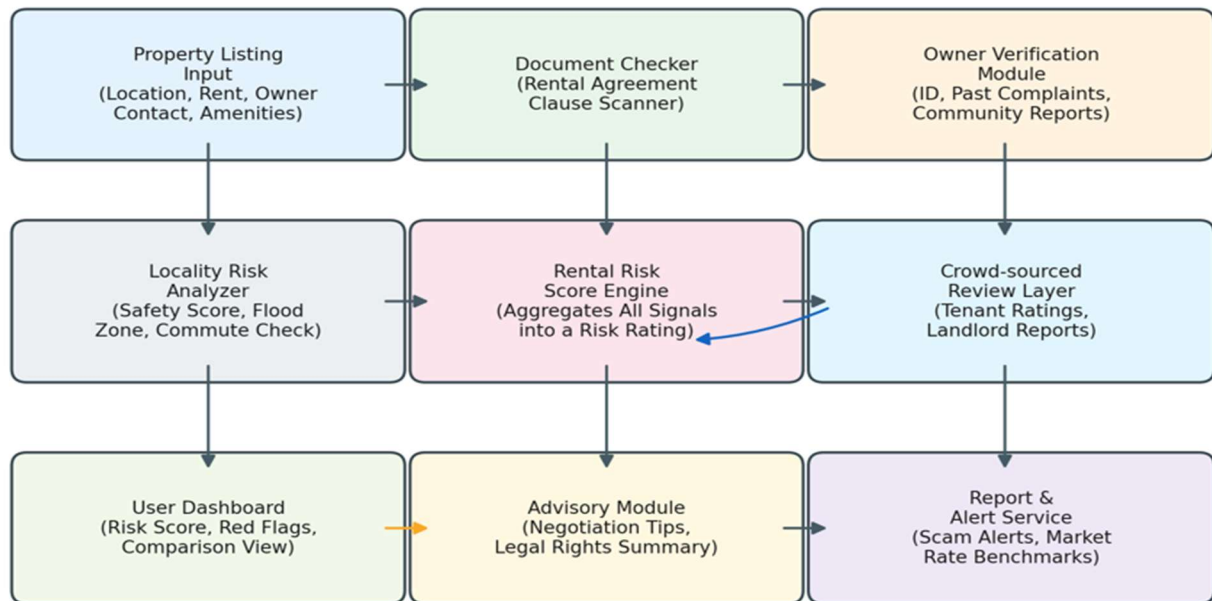
The legal framework for rental agreements in India, primarily governed by the Model Tenancy Act 2021 at the central level and by state-specific rental laws, provides protections in principle limits on advance deposit, notice periods for eviction, maintenance responsibilities but the practical enforceability of these provisions is limited in the informal rental market where many students find housing, and few tenants have the time or resources to have an agreement reviewed by a lawyer before signing.

In countries with more mature rental markets, tenant-advocacy platforms and local government portals sometimes provide landlord complaint registries, inspection records, and habitability ratings. In the Indian context, this kind of official data is not systematically available in a digital, publicly queryable form, which means any risk assessment tool must work primarily with what can be inferred from available signals and crowd-sourced inputs rather than official records.

III. PROPOSED SYSTEM ARCHITECTURE

Fig. 1 shows the architecture of RentSafe. Property details and documents provided by the user are processed through a set of analysis modules that assess owner credibility, agreement terms, and locality characteristics; these signals are then aggregated into a risk score and advisory report.

Fig. 1 System Architecture of RentSafe



A. Property Listing Input

The user enters the details of the property they are considering: address or location, monthly rent, owner’s contact information, and any listing URL. They can also upload the rental agreement text if the landlord has shared it, which enables the document-scanning component.

B. Document Checker

If a rental agreement is provided, this module scans it for clause patterns that are either legally problematic or practically unfavorable: unusually large advance deposit requirements (more than the two months standard under the Model Tenancy Act), clauses that allow no-notice entry by the landlord, prohibitions on cooking or having guests, liability clauses that assign maintenance costs that should legally fall on the landlord to the tenant, and any

language that is internally contradictory or absent (such as a lease that specifies no renewal terms).

C. Owner Verification Module

This module checks available signals of owner legitimacy: whether the owner name matches the property registration details where these are queryable, whether the phone number or listing has been associated with complaints in the community database, and whether the listing itself shows signs of fraud such as images that appear in multiple listings, rental amounts that are unusually low for the locality, or requests for advance payment before any viewing.

D. Locality Risk Analyzer

For the address or neighbourhood provided, the system retrieves locality-level information including general safety score based on available crime data or community reports, flood zone or waterlogging risk

relevant for Indian monsoon conditions, public transport connectivity, and approximate commute time to common destinations such as the nearest college or bus stand.

E. Crowd-sourced Review Layer, Risk Score Engine, and Advisory Module

Previous tenants who have lived at an address or dealt with a specific landlord can leave reviews, which feed into the risk aggregation. The Risk Score

Engine combines all available signals into a single rated output Low, Moderate, High, or Do Not Proceed with weights adjustable based on which data sources were actually available for the specific property. The Advisory Module accompanies the rating with specific, actionable notes such as which clauses to push back on, what questions to ask the landlord directly, and what a fair market rate for the area looks like.

IV. METHODOLOGY: RISK SCORING ALGORITHM

The core challenge in RentSafe's design is that not all signals will be available for every property: a new listing may have no previous tenant reviews, a locality may have limited safety data, and many

landlords will not share the agreement until the last minute. The algorithm is designed to produce a useful rating even from a partial signal set, by flagging the missing data explicitly and adjusting confidence accordingly rather than silently filling gaps with neutral assumptions.

Algorithm 1: Rental Risk Scoring Workflow

1. User inputs property details (location, rent, owner contact, listing URL)
2. System retrieves locality_profile: safety score, connectivity, flood risk
3. Owner Verification Module runs:
 - a. Cross-check owner ID against community complaint database
 - b. Check if listing matches known scam patterns (stock photos, below-market rent)
 - c. Compute owner_trust_score
4. If rental agreement is uploaded then
 - a. Run Document Checker on agreement text
 - b. Flag clauses: unusual deposit terms, no-notice eviction, subletting bans
 - c. Compute agreement_risk_score
5. Retrieve crowd-sourced reviews for this address / owner (if available)
6. Aggregate all signals into final_risk_rating:

$$\text{final_risk_rating} = w1*\text{locality} + w2*\text{owner_trust} + w3*\text{agreement} + w4*\text{reviews}$$
7. Classify: Low Risk / Moderate / High Risk / Do Not Proceed
8. Generate risk_report: flag list, advisory notes, negotiation tips
9. Push to User Dashboard; send alert if High Risk or Do Not Proceed

Table I compares RentSafe against the resources that prospective tenants typically use today to assess a rental property.

TABLE I
COMPARISON OF RENTSAFE WITH CURRENT TENANT INFORMATION SOURCES

Feature	Online Listing Sites	Word-of-mouth / Agent	Self-research	RentSafe (Proposed)
Structured owner verification	No	No	No	Yes
Agreement clause scanner	No	No	No	Yes
Locality risk / safety scoring	No	No	No	Yes
Scam / fraud alert	No	No	No	Yes
Market rate benchmarking	Partial	No	No	Yes

V. ADVANTAGES AND PRACTICAL APPLICATIONS

For students moving to a new city, RentSafe provides the equivalent of having a well-connected local friend who knows the neighbourhood and can read a rental agreement, a resource that most students simply do not have. Even a basic risk flag “the deposit demanded here is three times the legal maximum” or “this listing image also appears on five other listings in different cities” can save a student from a decision they would later deeply regret.

For families relocating for work, the locality risk component adds value they often cannot easily assess from outside the city: whether an apparently affordable area is prone to waterlogging, whether it has reliable public transport, and whether it is within a reasonable commute of schools and hospitals. These factors are not captured on listing platforms but can significantly affect quality of life and long-term costs.

VI. CHALLENGES AND LIMITATIONS

The crowd-sourced review layer, which is potentially the most valuable part of the system, also has the classic cold-start problem: the first tenants to use RentSafe in any city will find it less useful than

those who come later, because there are few or no existing reviews to draw on. Building a critical mass of reviews quickly enough that the system is useful before the user base is large is one of the main go-to-market challenges.

Crowd-sourced reviews are also susceptible to manipulation in both directions: a landlord posting fake positive reviews, or a disgruntled tenant posting unfairly negative ones. A verification mechanism — for instance, requiring that a reviewer confirm their tenancy through a utility bill or the address on their Aadhaar — improves reliability but also raises the barrier to leaving a review, which reduces volume. Striking the right balance here is a design problem without a clean technical solution.

Finally, the legal disclaimer around the risk rating needs to be prominent and clear: RentSafe can identify patterns that deserve scrutiny, but it cannot guarantee that a High Risk property will actually cause problems or that a Low Risk property is free of issues. Users should be encouraged to treat the rating as a starting point for due diligence, not a substitute for it.

VII. CONCLUSION AND FUTURE WORK

This paper presented the design of RentSafe, a rental risk analysis system that aggregates owner verification, agreement clause analysis, locality information, and crowd-sourced reviews into a structured risk rating for any rental property a prospective tenant is considering. The system is designed specifically to address the information asymmetry that puts students and families at a disadvantage in India's largely informal rental market.

Future work includes building partnerships with local civic bodies and police departments to access official complaint and property-registration data where it is digitally available, developing a natural-language agreement clause extractor that can handle the wide variety of formats used in informal rental agreements, and exploring a verified tenancy credential that allows genuine previous tenants to leave reviews with higher trust weight than unverified ones.

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