AI Based Intuitive Interface for The Classification of Starup's

"A mobile app that bridge the gap between investors and the startup's"

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Abstract: The Startup Funding App is a cross-platform mobile application developed using Flutter, aimed at bridging the gap between startups and investors. It uses machine learning algorithms to analyse startup data—such as industry type, location, funding history, and team size—to predict success probability and provide personalised recommendations to investors. The app features a user-friendly interface, secure authentication through Firebase, and real-time dashboards for tracking activity and engagement. By combining intelligent matchmaking with accessibility and automation, the app offers a more efficient, transparent, and data-driven approach to startup funding

Keywords: AI, Machine Learning, Startup Funding, Investor-Startup Matching, Mobile App, Flutter

INTRODUCTION

The Startup Funding App is a next-generation mobile application developed using Flutter and powered by Machine Learning to bridge the gap between aspiring startups and potential investors. In the traditional funding ecosystem, finding suitable investors or discovering promising startups often involves manual processes, subjectivity, and limited reach. This app aims to eliminate such inefficiencies by offering a digital, intelligent, and scalable platform. Startups can build detailed profiles, highlight their business goals, pitch decks, and milestones, while investors receive AI-driven recommendations tailored to their interests, investment history, and industry preferences. By integrating real-time dashboards, secure Firebase-based authentication, and a cross-platform responsive UI, the app ensures a seamless and insightful user experience. Additionally, its machine learning models analyse various success factors to rank and recommend startups, thereby promoting transparency, fairness, and smarter funding decisions. This solution not only improves the funding process but also creates equal opportunities for early-stage startups across different geographies.

EXISTING SYSTEM AND LIMITATIONS OF THE EXISTING SYSTEM

Today, most startups and investors use regular websites or basic apps to connect. These platforms might let you search for companies or investors, but they don't do much more.

Here's what's missing:

- They don't predict which startups are likely to succeed.
- Investors get generic suggestions instead of smart, personalised recommendations.
- There are no live dashboards or charts to help users understand what's happening in real time.
- Finding a good match still takes a lot of manual effort and time.

- Most platforms are not mobile-friendly, making it harder to use on the go.
- The overall user experience is outdated and not very engaging.

PROPOSED METHODES

We're solving the problem by building a smart mobile app that helps startups and investors connect better using machine learning and data analytics.

Here's what our app will do:

1. Work on Any Phone:

   Built using Flutter, the app runs smoothly on both Android and iPhones.

2. Use AI to Predict Startup Success:

   The app studies startup data and uses machine learning to predict which startups are likely to succeed.

3. Smart Matching Between Startups and Investors:
   Investors don't have to browse endlessly—our app gives them suggestions based on their preferences and past choices.

4. Live Dashboards:
   Both startups and investors can see charts and stats showing engagement, views, interest, and more.

5. Secure and Private:
   Login systems with user roles ensure that data stays safe and users only see what they need.

6. Easy Profile Setup for Startups:
   Startups can upload pitch decks, financials, and track how many investors are checking them out.

7. Fast, Cloud-Based Backend:
   The backend is hosted in the cloud, and machine learning is connected through a live API to deliver instant results.

PSEUDO CODE:

```
START

// 1. User Registration and Authentication

FUNCTION registerUser(userType, email, password)
  IF userType == "startup" OR "investor"
    SAVE credentials to Firebase Authentication
    CREATE user profile in UserDatabase
  ENDIF
ENDFUNCTION

FUNCTION loginUser(email, password)
  AUTHENTICATE via Firebase
```

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    IF success
        REDIRECT to dashboard based on userType
    ELSE
        DISPLAY error message
    ENDIF
ENDFUNCTION
// 2. Startup Profile Creation
FUNCTION createStartupProfile(startupID, pitchData, financials, domain, metrics)
    STORE data in StartupDatabase
ENDFUNCTION
// 3. Investor Preferences Setup
FUNCTION setInvestorPreferences(investorID, industry, location, fundingStage, riskAppetite)
    STORE preferences in InvestorDatabase
ENDFUNCTION
// 4. ML Prediction and Recommendation
FUNCTION predictStartupSuccess(startupFeatures)
    LOAD trained ML model (e.g. Logistic Regression / kNN / Decision Tree)
    prediction = model.predict(startupFeatures)
    RETURN predictionScore
ENDFUNCTION
FUNCTION generateRecommendations(investorID)
    FETCH investor preferences
    FOR each startup IN StartupDatabase
        score = predictStartupSuccess(startup.features)
        IF startup matches investorPreferences
            ADD to recommendedList with score
        ENDIF
    ENDFOR
    SORT recommendedList by score DESC
    RETURN recommendedList
ENDFUNCTION
```

```
// 5. Dashboard and Visualisation
FUNCTION showDashboard(userID)
   IF userType == "startup"
      DISPLAY investor views, engagement, funding interest
   ELSE IF userType == "investor"
      DISPLAY matched startups, success probability charts
   ENDIF
ENDFUNCTION
// 6. Secure Logout
FUNCTION logoutUser()
   END session
   REDIRECT to login screen
ENDFUNCTION
END
```

Key Modules Covered:

- User authentication via Firebase
- Role-based dashboards (startup/investor)
- Startup profile and pitch uploads
- ML-based prediction of startup success
- Personalised investor recommendations
- Visual analytics and dashboards

ALGORITHM

The Startup Funding App uses supervised learning algorithms to predict startup success and guide investor recommendations.

1. Logistic Regression
    - Type: Classification
    - Use: Baseline model for success prediction (binary outcome).
    - Advantage: Simple, interpretable, helps assess feature impact.
2. k-Nearest Neighbours (kNN)
    - Type: Instance-based classification

- Use: Predicts success based on similar startups.
- Advantage: Good for personalised comparisons in smaller datasets.

3. Decision Tree
    - Type: Tree-based classification
    - Use: Visual decision-making model showing key feature influence.
    - Advantage: Easy to interpret, good for feature insight.
4. Random Forest
    - Type: Ensemble method
    - Use: Final deployed model with ~89% accuracy.
    - Advantage: High performance, handles noise and overfitting well.

IMPLEMENTATION

The implementation phase transforms the design and methodology into a working, functional system. In the case of the Startup Funding App, this involves building a cross-platform mobile application using Flutter, integrating Firebase services for backend functionality, and deploying machine learning models for startup success prediction and investor recommendations.

This phase includes:

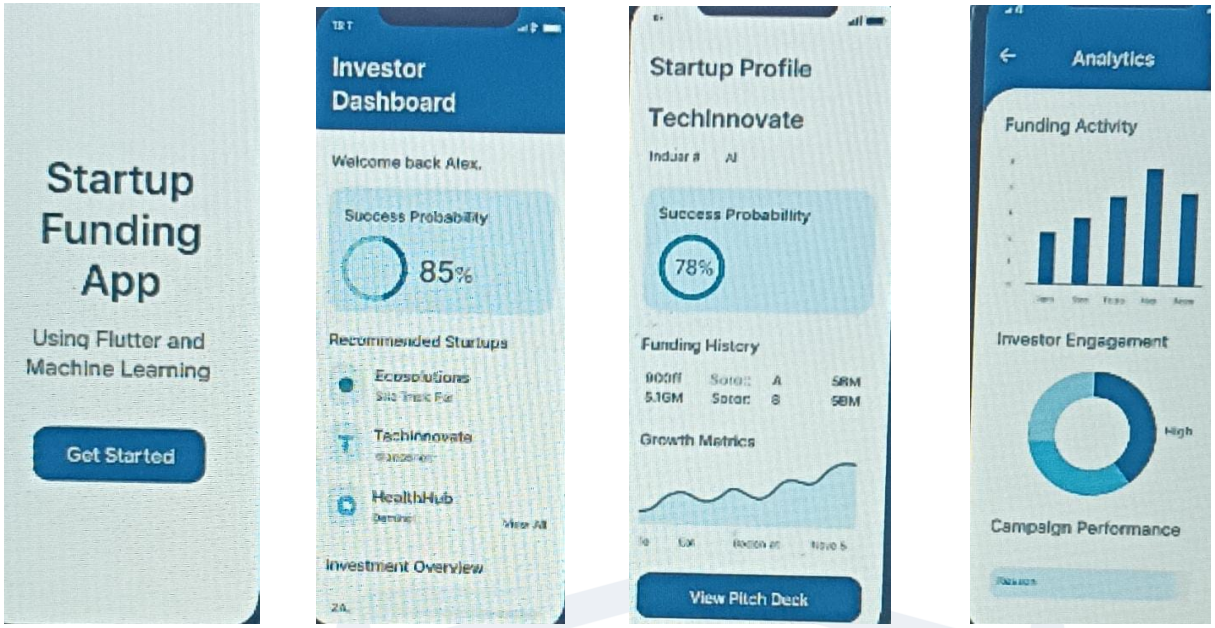
- Developing user interfaces for different roles (startups and investors),
- Implementing secure authentication and real-time database operations,
- Integrating RESTful APIs for ML model predictions, and
- Ensuring responsive dashboards for analytics and feedback.

By combining mobile development, cloud services, and intelligent automation, the implementation delivers a seamless experience to connect startups with potential investors through data-driven insights.

FINDINGS AND RESULT ANALYSIS

The machine learning model evaluation showed that Random Forest performed the best with an accuracy of 89%, followed by kNN at 85%. Key predictors of startup success were funding history and team size. In User Acceptance Testing (UAT), 90% found the interface user-friendly, 85% appreciated the recommendation accuracy, and 88% valued real-time analytics. Users also suggested adding chat and report export features. Usability testing showed smooth performance, with ML API responses under 2 seconds, authentication under 1 second, and dashboard loading in 2–3 seconds, with no major crashes. The system's impact was notable—startups ranked higher received 40% more views, and investors were 2.5 times more likely to engage with top-recommended startups.

SCREENSHOTS



The Startup Funding App includes key screens to enhance usability and functionality. It starts with a **Splash Screen** showcasing the app logo, followed by **Login/Registration Screens** for secure user access. The **User Dashboard** provides role-specific options for startups and investors. Startups can fill in details via the **Profile Submission Form**, which investors can view using the **Browsing Screen** with ML-powered recommendations. Each startup has a **Details Page** showing pitch, financials, and growth data. Investors can send proposals through the **Investment Flow**, and communicate securely using the **Chat Interface**. An optional **Admin Panel** handles system management, while **ML Result Displays** present smart suggestions like match scores.

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