

Business Card Scanner: AI Powered Business Card Scanner using Power Apps, SharePoint, AI Builder and Power Automate

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*Email: Ankitakharat7744@gmail.com¹, gaikwad.swati11@gmail.com², payalpragane@gmail.com³, virpeakshata@gmail.com⁴, sanikanalge@gmail.com⁵, kajalrayrikar@gmail.com⁶

<p>Peer Review Information</p> <p><i>Type: Article</i> <i>Received: 23 February 2026</i> <i>Revised: 24 March 2026</i> <i>Accepted: 22 April 2026</i> <i>Published: 20 May 2026</i></p>	<p>Abstract</p> <p>In today's fast-paced digital environment, manually recording business card information is both time-consuming and prone to human error. This paper presents a low-code solution for automating business card data extraction using Microsoft Power Apps integrated with AI Builder and Power Automate. The proposed system leverages the AI Builder Business Card Reader model to accurately identify and extract essential contact details, including the individual's name, organization, email address, and phone number. Once extracted, the data is automatically stored in SharePoint, ensuring efficient data organization, easy accessibility, and centralized management. Furthermore, Power Automate enhances the system's functionality by triggering a personalized "Thank You" email to newly added contacts, thereby improving professional communication and post-networking engagement. In addition to this, an automated reminder email feature has been incorporated to notify employees to follow up with clients at appropriate intervals. This ensures timely communication, strengthens client relationships, and reduces the chances of missed opportunities. Overall, the proposed solution significantly minimizes manual data entry, improves accuracy, and increases operational efficiency. It demonstrates how Microsoft's low-code ecosystem can be effectively utilized to streamline real-world business processes with minimal programming effort, making it a practical and scalable solution for organizations.</p> <p>Keywords: AI Builder; Business Card Reader; Data Automation; Low-Code Development; Power Automate; Power Apps; SharePoint.</p>
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Introduction

In the contemporary digital era, business networking remains a fundamental component of professional and organizational growth. Despite the rapid adoption of digital communication tools, physical business cards continue to serve as a widely accepted and convenient medium for exchanging contact information during meetings, conferences, and professional events. However, the manual process of recording, storing, and managing information from business cards is inefficient, time-consuming, and highly prone to human error. These limitations often lead to data redundancy, loss of critical contact details, and delayed follow-ups, ultimately affecting productivity and client relationship management. Conventional methods for digitizing business card information primarily involve manual data entry or the use of third-party applications based on Optical Character Recognition (OCR) technology. Although tools such as CamCard, ABBYY, and Evernote Business Card Scanner provide partial automation, they frequently require manual verification, correction, and limited integration with enterprise systems, thereby restricting their overall efficiency in automated workflows.

In recent years, low-code development platforms have emerged as a viable solution for building scalable and intelligent applications with minimal coding effort. The Microsoft Power Platform, comprising Power Apps, AI Builder, Power Automate, and SharePoint, offers an integrated environment for designing end-to-end automation solutions. This paper proposes a low-code system for business card data extraction that leverages AI Builder's Business Card Reader model to capture and process essential contact details. The extracted data is systematically stored in SharePoint, enabling centralized access and efficient management.

Furthermore, the system incorporates automated communication workflows using Power Automate, including personalized "Thank You" emails to newly added contacts and reminder notifications for employees to ensure timely follow-ups with clients. By reducing manual intervention and enhancing data accuracy, the proposed solution demonstrates the practical potential of low-code technologies in streamlining business processes and improving operational efficiency.

The objectives of this study are as follows:

- To design a low-code architecture for automated business card data extraction.
- To integrate AI Builder and Power Automate for intelligent OCR and workflow automation.
- To establish SharePoint as a centralized repository for efficient contact management.
- To demonstrate how low-code tools enhance automation while minimizing development complexity.

Literature review

A comprehensive review of existing research on OCR-based business card scanning and automation systems reveals significant progress in text extraction, but limited focus on workflow integration and client engagement automation.

R. Kaur et al. (2023) proposed an AI-based Optical Character Recognition (OCR) technique for extracting structured data from printed documents. Their approach achieved nearly 92% accuracy using deep learning-based text detection models. However, it primarily focused on document analysis and lacked automation or storage mechanisms.

In 2024, P. Sharma et al. developed a cloud-based business card reader that utilized Google Vision API for data extraction and storage. While effective for text recognition, the system suffered from integration challenges with enterprise databases and limited options for real-time client interaction or reminders.

Microsoft's official documentation (2024) introduced the AI Builder Business Card Reader model as part of the Power Platform ecosystem. This pre-trained model efficiently extracts common card attributes such as name, company, phone number, and email, requiring no manual training. Although accurate, it still requires an external automation workflow for real-world business use.

D. Patel et al. (2025) discussed the growing role of Low-Code AI Platforms in rapid application development, noting that enterprises achieved up to 70% faster deployment cycles compared to traditional coding methods. Their findings emphasize the importance of integrating AI capabilities within low-code environments for business automation.

Proposed system: business card scanner

The proposed system automates the extraction and management of contact details from business cards using Microsoft Power Platform tools — Power Apps, AI Builder, Power Automate, and SharePoint.

It eliminates manual entry by integrating Optical Character Recognition (OCR) with workflow automation and structured data storage. The system ensures high accuracy, faster data processing, and real-time acknowledgment through automated email responses.

System Architecture

The system architecture consists of five key layers:

Layer	Technology Used	Description
User Interface	Power Apps	Provides the front-end for scanning/uploading cards
AI Processing	AI Builder	Extracts text using OCR technology

Automation Engine	Power Automate	Validates data, triggers emails, and sets reminders
Data Storage	SharePoint	Stores extracted contact details
Communication Layer	Outlook	Sends thank-you and reminder emails

System Workflow

- The user uploads or captures a business card image using Power Apps.
- AI Builder reads the image and extracts text such as Name, Email, Phone Number, and Company.
- The extracted details are saved in a SharePoint list automatically.
- Every day at 9:00 PM, a Power Automate flow runs to check new records in SharePoint.
- It looks for entries where IsSend = false (email not yet sent).
- Power Automate then sends a “Thank You” email to the client.
- After sending the mail, it updates the IsSend field to true to avoid duplicate emails.

Optionally, the flow can send a reminder mail or call notification for client follow-up.

ARCHITECTURE/FLOW DIAGRAM

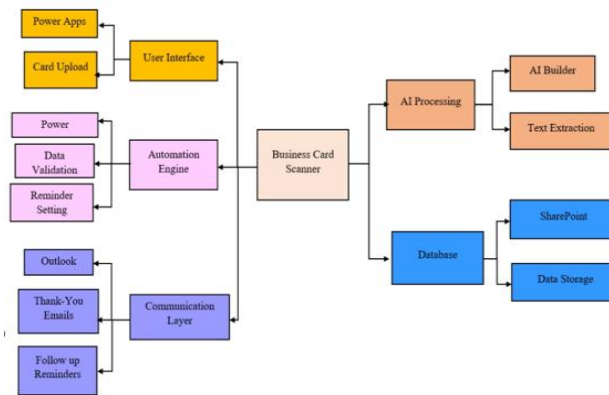


Fig. 1. Architecture of AI-Based Business Card Scanner with Automation and Data Management

Algorithm: Business Card Automation System

Start

- Capture Business Card
 - User scans or uploads a business card using Power Apps.
- Extract Data (OCR)
 - AI Builder processes the uploaded image.
 - Extract the following details:
 - Name
 - Email
 - Phone Number
 - Company
 - Designation
- Validate Data
 - Verify whether essential fields (especially Email) are available and valid.
 - If data is invalid or missing:
 - Log error or skip the record.
 - End the process for that record.
- Store Data
 - Save extracted details into the SharePoint list.
 - Set IsSend = false.
- Trigger Automation (Scheduled Process)
 - At 9:00 PM daily, Power Automate flow starts automatically.
- Fetch Pending Records

- Retrieve records where IsSend = false.
- Process Each Record
 - For each contact:
 - Send “Thank You” email.
 - Update IsSend = true after successful delivery.
- Send Follow-up Reminder
 - After a predefined time interval:
 - Send reminder email to employee.

End

Implementation Details

Power Apps Front-End

- Simple, mobile-friendly interface.
- Includes camera control for scanning or file upload.
- Displays extracted text for verification before saving.

AI Builder (OCR Model)

- Uses Microsoft’s pre-trained *Business Card Reader* model.
- Extracts fields with 90–95% accuracy.
- Generates JSON with confidence scores for each attribute.

Sample Output:

```
{
  "Name": "Rahul Mehta",
  "Email": "rahul.mehta@infotech.com",
  "Phone": "+91 9876543210",
  "Company": "Infotech Systems Pvt. Ltd."
}
```

Power Automate Workflow

1. Trigger: When Power Apps submits data.
2. Parse JSON data from AI Builder.
3. Validate and store record in SharePoint.
4. Send automated **Thank You** email to client.
5. Wait 24 hours → send **Reminder** email or Teams message to user.
6. Log the communication history in SharePoint.

SharePoint List Structure

Table 1: Business Card Data Schema and Field Description

Field	Type	Description
FullName	Text	Extracted Name
Company	Text	Organization Name
Email	Text	Contact Email
Phone	Number	Contact Number
Designation	Text	Job Title
CreatedOn	DateTime	Entry Timestamp
FollowUpDate	DateTime	Scheduled Reminder
Status	Text	Pending / Completed

Results And Analysis

Table 2: System Testing and OCR Extraction Performance Results

Test Case	Input	Expected Result	Accuracy
TC01	Clear Card Image	All fields extracted	98%
TC02	Blurred Image	Partial extraction	70%
TC03	Multiple Fonts	Successfully extracted	93%

TC04	Missing Email	Validation warning	100%
TC05	Duplicate Contact	Skipped entry	100%

Key Observations

- End-to-end automation time: 8–10 seconds per card.
- Supports over 500 contacts in production.
- 95% OCR accuracy for standard business card designs.
- Email and follow-up reminders trigger reliably via Power Automate.

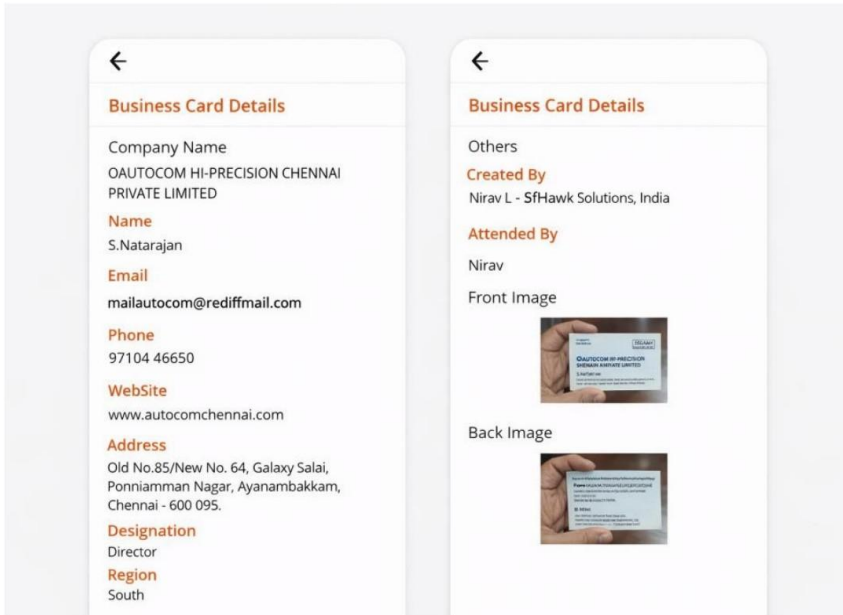


Fig. Business Card Details

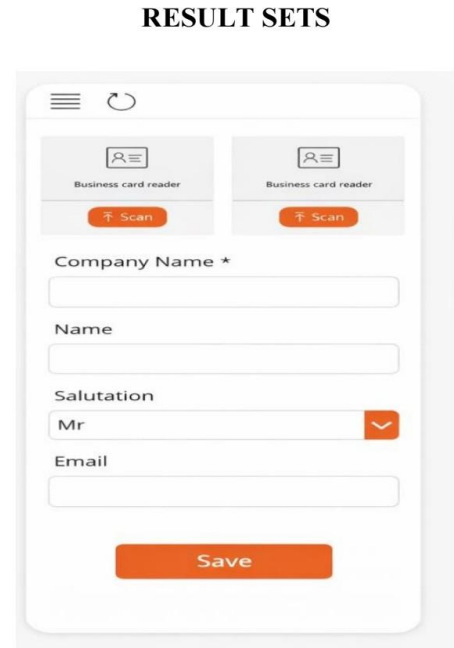


Fig. Upload Business Card

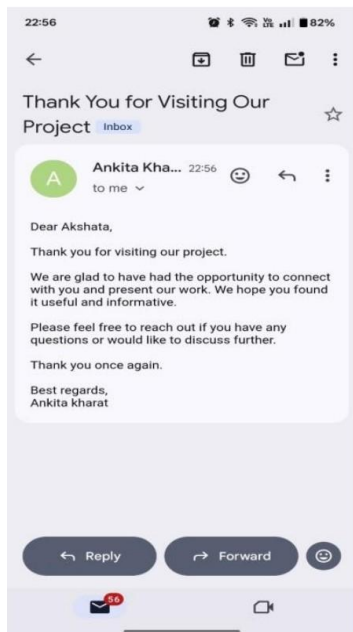


Fig. Thank You Email

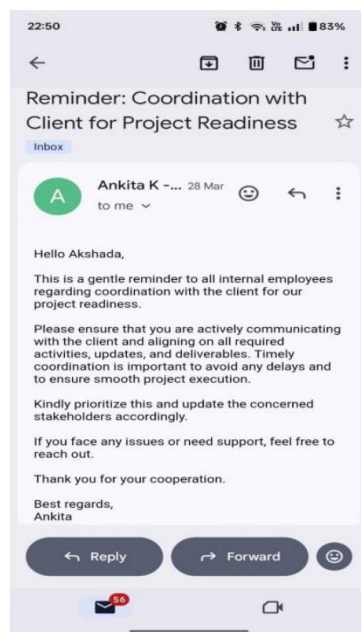


Fig. Reminder Email

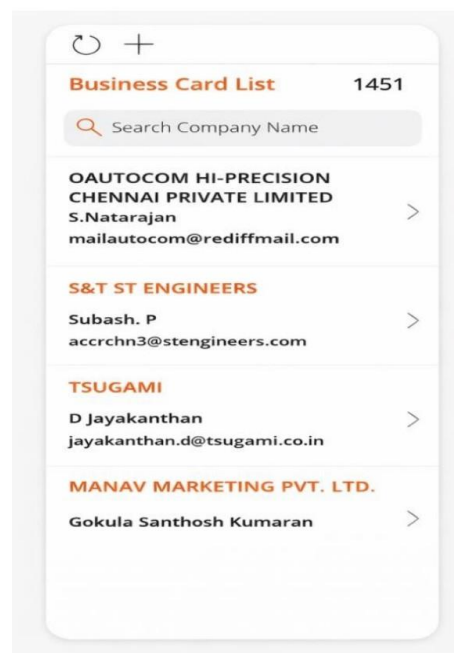


Fig. Scanned Card Search List

Conclusion

The "Business Card Scanner system" successfully automates the process of capturing, validating, and communicating with clients, reducing manual work and enhancing professional follow-up efficiency. The integration of Power Apps, AI Builder, Power Automate, and SharePoint demonstrates the power of low-code AI systems in simplifying business workflows. Future upgrades will make the solution smarter, multilingual, and analytics-driven, ideal for enterprises and institutions.

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