

# LeadRank – Smart Lead Scoring System

## Project Report

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### Executive Summary

**LeadRank** is a Python-powered lead scoring system designed to assist sales and marketing teams in identifying and prioritizing high-quality leads. By automating the evaluation process, LeadRank improves decision-making through data-driven insights and visual analytics. A user-friendly **Streamlit** interface allows easy interaction with the system, making the lead evaluation process fast, transparent, and customizable.

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### Technical Implementation

#### Core Components

- `lead_scorer.py`: Implements the core scoring algorithm, assigning a lead score between 0–100 based on five weighted factors.
  - `email_validator.py`: Performs comprehensive email validation checks, including format, domain, and MX record validation.
  - `app.py`: Streamlit-based web UI that displays scores, charts, and filtering options for real-time analysis.
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### Key Features Implemented

1. **Lead Scoring Engine**
    - **Email Validity (40%)**: Checks for format accuracy, domain presence, and MX record.
    - **Title Seniority (20%)**: Analyzes job titles for seniority (e.g., “Manager”, “Head”, “VP”).
    - **Domain Quality (20%)**: Evaluates domain against known generic domains (e.g., Gmail, Yahoo) and prioritizes business domains.
    - **LinkedIn Presence (10%)**: Optionally checks for LinkedIn profile links or clues.
    - **Company Match (10%)**: Verifies if the domain matches a known company list or dataset.
  2. **Data Analysis Dashboard**
    - Real-time scoring and visualization
    - Filters for job titles, domains, and score ranges
    - Word cloud for job titles
    - Email domain heatmap
    - Summary metrics and charts for lead quality
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### Technology Stack

- **Programming Language**: Python 3.9+
- **Web Framework**: Streamlit 1.24.0

- **Data Processing:** Pandas 2.0.3
- **Visualization:** Plotly, Altair, Matplotlib
- **Text Analysis:** WordCloud

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### Results & Metrics

- Seamless, automated scoring of leads using customizable parameters
- Export capabilities for filtered leads in **CSV** and **Excel** formats
- Improved lead prioritization with real-time dashboard
- Custom weight adjustment for flexible scoring strategy
- Visual insights including:
  - Pie charts for domain type distribution
  - Word cloud of job titles
  - Scoring histograms and top domains

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### Project Structure

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```
├── src/
|   ├── app.py          # Main Streamlit UI and dashboard
|   ├── lead_scorer.py  # Core scoring algorithm
|   ├── email_validator.py # Email verification logic
|   └── utils/          # Utility/helper functions
├── tests/              # Unit and integration tests
└── data/              # Input sample datasets
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### Conclusion

LeadRank simplifies lead qualification through a structured, visual, and automated approach. By integrating validation, analysis, and scoring in a single tool, it enables teams to focus on high-priority prospects, ultimately increasing efficiency and conversion rates. With modular components and customizable parameters, the tool can be further extended for CRM integration or enterprise-level use.