**Project Charter Document**



**Project Name:** Intelligent Bar Counting

**Industry:** Iron and Steel

**Department:** Business Analysis

**Product/Process:** Image Processing



**Prepared By**

|  |  |
| --- | --- |
| **Document Owner(s)** | **Project/Organization Role** |
| Seema B S | Data Scientist |
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**Project Charter Version Control**

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| --- | --- | --- | --- |
| **Version** | **Date** | **Author** | **Change Description** |
| 1.0 | 05/07/2023 | Seema B S | Document created |
| 2.0 | 29/08/2023 | Seema B S | Document Updated |

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# PROJECT CHARTER PURPOSE

The project charter defines the scope, objectives, and overall approach for the work to be completed. It is a critical element for initiating, planning, executing, controlling, and assessing the project. It should be the single point of reference on the project for project goals and objectives, scope, organization, estimates, work plan, and budget. In addition, it serves as a contract between the Project Team and the Project Sponsors, stating what will be delivered according to the budget, time constraints, risks, resources, and standards agreed upon for the project.



# PROJECT EXECUTIVE SUMMARY

* Business Problem: Staff is manually counting the number of 8mm, 16mm, 32mm, etc., steel rods in inventory. This is both time consuming and error prone.
* Business Objective: Minimize the time taken in counting the steel rods
* Business Constraint: Minimize manual effort
* Success Criteria:
  + Business Success Criteria: Reduce the time taken in counting the steel rods by at least 75%
  + Machine Learning Success Criteria: Achieve an accuracy of at least 98%
  + Economic Success Criteria: By reducing the manual effort, we shall save at least 10LPA
* Data Collection: Secondary Data Sources (Published Papers, RDBMS)
* Scope: To solve the deficiencies of traditional manual bar counting, we design a steel bar real-time recognition system, using computer vision and image processing techniques.
* Assumptions: Data will be provided by customer, Cloud & GPU will be provided by customer
* Risks: Increases the difficulty in bars center detection and tracking the bars in continuous frames.
* Costs: 50 Lakhs Rs
* Timeline: Project will be for 30 to 45 days.
* Approach: Segmentation Algorithm



# PROJECT OVERVIEW

Currently, the bar counting is mainly completed by manpower, this method can make the workers fatigue easily, besides error counting, which cannot guarantee the accurateness of packaging and match the high level of automatic equipment of steel rolling production line. To solve these problems, using machine vision and computer image processing technology, we design a real-time steel bars system. First, we build up the hardware and software structure of system. Then we introduce the detailed working process, and design the detailed image processing algorithm. The results of experiments demonstrate the accuracy of bar counting in a single frame is up to 96% in this system, and its processing speed can meet the real-time requirements.



# PROJECT SCOPE

To solve the deficiencies of traditional manual bar counting, we design a steel bar real-time recognition system, using computer vision and image processing techniques. This system can eliminate fatigue and the inaccurate in manual mode, and maintain enterprise economic interests through improving efficiency.

## Project Deliverables

|  |  |
| --- | --- |
| **Milestone** | **Deliverable** |
| * Identifying Constraints and design the project architecture, explore various public forums to collect relevant data, Data Preparation. | * Deliverable 1.1—Identifying Constraints and design the project architecture. * Deliverable 1.2—Explore various public forums to collect relevant data. * Deliverable 1.3— Data Preparation |
| * EDA and Descriptive Analytics, Model Building for Association (Fuzzy Algorithm) and Recommendation | * Deliverable 2.1— EDA and Descriptive Analytics * Deliverable 2.2— Model Building for Association (Fuzzy Algorithm) and Recommendation |
| * Model Evaluation, tuning and insights, Deployment | * Deliverable 3.1— Model Evaluation, tuning and insights. * Deliverable 3. 2— Deployment |
| * Show case and review, Final Presentation and documentation, Handover and KT. | * Deliverable4.1 – show case and review * Deliverable4.2 – Final Presentation and documentation * Deliverable4.3 – Handover and KT |

## Deliverables Out of Scope

* Improve Counting Precision
* Further optimization Algorithm

## Project Duration (start date: 05/07/2023 End date: 29/08/2023)

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Milestone** | **Date Estimate** | **Deliverable(s) Included** | **Confidence Level** |
| * Identifying Constraints and design the project architecture, explore various public forums to collect relevant data, Data Preparation. | [15/09/2021]  -  [21/09/2021] | * Deliverable 1.1—Identifying Constraints and design the project architecture. * Deliverable 1.2—Explore various public forums to collect relevant data. * Deliverable 1.3— Data Preparation | [High] |
| * EDA and Descriptive Analytics, Model Building for Association (Fuzzy Algorithm) and Recommendation | [22/09/2021]  -  [28/09/2021] | * Deliverable 2.1— EDA and Descriptive Analytics * Deliverable 2.2— Model Building for Association (Fuzzy Algorithm) and Recommendation | [High] |
| * Model Evaluation, tuning and insights, Deployment | [29/09/2021]  -  [05/10/2021] | * Deliverable 3.1— Model Evaluation, tuning and insights. * Deliverable 3. 2— Deployment | [High] |
| * Show case and review, Final Presentation and documentation, Handover and KT. | [06/10/2021]  -  []12/10/2021 | * Deliverable4.1 – show case and review * Deliverable4.2 – Final Presentation and documentation * Deliverable4.3 – Handover and KT | [Medium] |



# PROJECT CONDITIONS

## Project Assumptions

* Data will be extracted from public sources and then client provided data is mapped and finally one master data will be shared by Innodatatics for further analysis.
* Create a web API by using Flask or Streamlit.
* Cloud deployment should be done.
* **Robust Tested:** Application should be tested for noise data also.

## Project Issues *– Fill it as and how project progresses.*

**Priority Criteria**

1 − High-priority/critical-path issue; requires immediate follow-up and resolution.

2 − Medium-priority issue; requires follow-up before completion of next project milestone.

3 − Low-priority issue; to be resolved prior to project completion.

4 − Closed issue.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Date** | **Priority** | **Owner** | **Description** | **Status & Resolution** |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |

## Project Risks – *Identify if there are any risks that you foresee.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Risk Area** | **Likelihood** | **Risk Owner** | **Project Impact-Mitigation Plan** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |



# PROJECT REFERENCES – Any previous projects you have referred. If yes, please share the details.

|  |  |
| --- | --- |
| **Project** | **Description** |
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|  |  |

# APPROVALS

**Prepared by** Nagamani Grandhe

Project Manager

**Approved by** Sharat Chandra M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Project Sponsor

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Executive Sponsor

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Client Sponsor

