

# Concept Note

Project Title:

Bias Buster – AI Agent for Detecting Gender Bias in Recruitment Texts

Team Name:

**VAGMinds**

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Objective:

To develop an AI-based tool that detects and highlights gender bias in recruitment/job descriptions, promoting inclusive hiring practices and supporting UN Sustainable Development Goal 5 (Gender Equality).

Problem Statement:

Recruitment texts often contain **subtle gender-biased words** that can unconsciously influence hiring decisions and discourage qualified candidates from applying. Manual review of job descriptions for bias is inconsistent and time-consuming. Despite growing awareness, there is a lack of scalable, automated tools to detect and correct gender bias in job postings. This creates barriers to achieving **fair and inclusive hiring**, especially for organizations aiming to align with **UN SDG 5: Gender Equality**.

Background:

Gender bias in recruitment language often deters qualified candidates from applying. This project focuses on using Natural Language Processing (NLP) and machine learning to scan job descriptions and detect biased language, offering alternative neutral phrasing. The solution supports ethical AI practices aligned with IBM's vision.

Methodology:

- Data Collection: Curated dataset with gender-biased and unbiased job descriptions
- Preprocessing: Text cleaning, tokenization, and labelling
- Model Training: Machine Learning model (e.g., Logistic Regression or SVM) trained on the labeled data
- Evaluation: Accuracy, precision, recall, and F1-score metrics
- Interface: HTML-based web interface for users to input job descriptions and get bias analysis

Features:

- Highlights biased words in real-time
- Uses NLP and machine learning

### Tools & Technologies:

- Python, Pandas, Scikit-learn, NLP Libraries (NLTK/Spacy)
- Google Colab (for model training and testing)
- HTML/CSS/JS (for interface)
- GitHub (for version control and hosting)

### Expected Outcome:

An easy-to-use tool that identifies and flags gender bias in recruitment content, helping HRs and recruiters to make job descriptions more inclusive.

### Alignment with SDGs and IBM Values:

This project directly supports SDG 5 (Gender Equality) and IBM's mission to promote responsible and ethical AI solutions with real-world impact.

### Future Scope:

- Integration with LinkedIn and job portals
- Advanced suggestions using generative AI
- Multi-language bias detect.