

# Salary Prediction Model

Author: [Name]  
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## Introduction

This project aims to develop a machine learning model to predict salaries based on various personal and professional attributes. The dataset used is the Salary Prediction Dataset (wardabilal).

## Dataset Description

The dataset contains the following features: • Age — • Gender — • Education Level — • Job Title — • Years of Experience — • Salary — (Target Variable)

## Model Development

The model was developed using the following steps: 1. Data Preprocessing (StandardScaler), 2. Feature Engineering (OneHotEncoder). 3. Model Training (Linear Regression, Ridge, Lasso).

## Model Performance

Model	R <sup>2</sup>	MAE	MSE
Linear Regression	0.8798	13064.36	333834993.44
Ridge	0.8805	13073.37	331806495.59
Lasso	0.8607	14765.57	386789167.45

## Model Evaluation

Ridge regression achieved the highest R<sup>2</sup> value (R<sup>2</sup> ≈ 0.88). The model's performance is evaluated using the Mean Absolute Error (MAE) and Mean Squared Error (MSE).

## Model Prediction

Example Input: • Age: 20 • Gender: Male • Education Level: Master's • Job Title: Director of Data Science • Years of Experience: 5 • Predicted Salary: ≈ 155,000.

