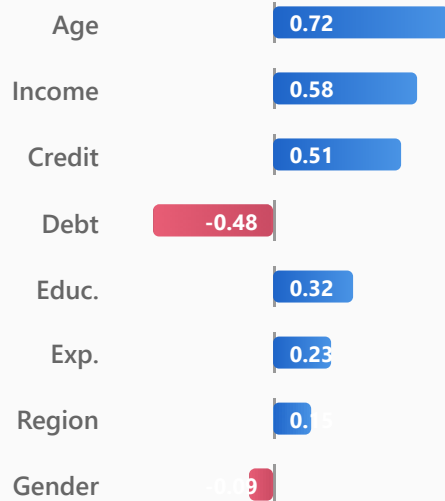


Sparse Linear Models

L1 Regularization for Feature Selection

Dense Model

Standard Linear Regression

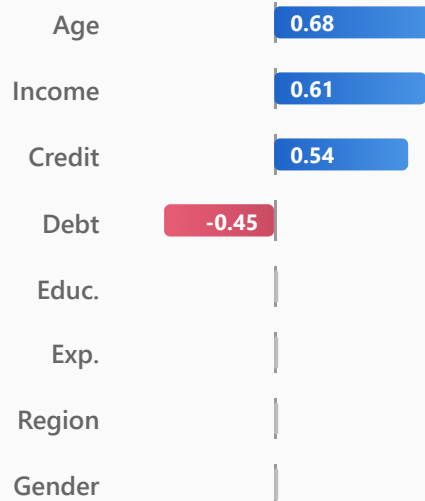


Non-zero
8

Features
8/8

Sparse Model

Lasso (L1 Regularization)



Non-zero
4

Features
4/8

Benefits

Auto Selection

Only relevant features retained

Interpretability

Reduced feature count

Implementation

Easier to deploy and debug

High-Dim

Valuable when $p \gg n$

Regularization

L1 (Lasso): Sparsity

L2 (Ridge): Stability

Elastic Net: Balanced