**A close-up of a chart

Description automatically generatedData Correlation Matrix**

**A graph of a graph

Description automatically generated with medium confidenceSHAP interpretability:**

**Evaluation Results**

performance: {'accuracy': 0.97292, 'precision': 0.9656585568293822, 'recall': 0.9641580773812607, 'f1\_score': 0.9649077337756583}

Variance of Numerical Features:

Income: 528038693.06598526

Num\_Children: 1.9882564969649696

Fairness Metrics:

Attribute: Gender

Statistical Parity: {'Female': 0.1948569141484891, 'Male': 0.5759944033579852}

Equal Opportunity (TPR): {'Female': 0.9268492869600903, 'Male': 0.9767554647174975}

Equalized Odds (TPR): {'Female': 0.9268492869600903, 'Male': 0.9767554647174975}

Equalized Odds (FPR): {'Female': 0.01747756258856873, 'Male': 0.02934366583187639}

Attribute: Own\_Car

Statistical Parity: {'No': 0.28990304246071547, 'Yes': 0.4263518333571123}

Equal Opportunity (TPR): {'No': 0.9482007792803118, 'Yes': 0.9688169164882227}

Equalized Odds (TPR): {'No': 0.9482007792803118, 'Yes': 0.9688169164882227}

Equalized Odds (FPR): {'No': 0.018740558912386705, 'Yes': 0.023058554300781055}

Attribute: Own\_Housing

Statistical Parity: {'No': 0.3184619506966774, 'Yes': 0.48495830023828435}

Equal Opportunity (TPR): {'No': 0.9551548288733505, 'Yes': 0.9728984841525035}

Equalized Odds (TPR): {'No': 0.9551548288733505, 'Yes': 0.9728984841525035}

Equalized Odds (FPR): {'No': 0.020839989186798063, 'Yes': 0.023000724812756706}

Attribute: Income\_Category

Statistical Parity: {'High': 0.732861868370024, 'Medium': 8.439174648719355e-05}

Equal Opportunity (TPR): {'High': 0.9705414635418025, 'Medium': 0.00392156862745098}

Equalized Odds (TPR): {'High': 0.9705414635418025, 'Medium': 0.00392156862745098}

Equalized Odds (FPR): {'High': 0.0927473144702661, 'Medium': 6.363617079948243e-05}

Subgroup Accuracy by Sensitive Attribute:

Attribute: Gender

Male: 0.9741754947031781

Female: 0.9716629977986793

Attribute: Own\_Car

Yes: 0.9734769581966044

No: 0.9716148445336008

Attribute: Own\_Housing

Yes: 0.9750049642573471

No: 0.9715132636655949

Attribute: Income\_Category

High: 0.9534048135051899

Medium: 0.9945778302881978