A graph with blue and pink lines

Description automatically generated

Evaluation Results:

performance: {'accuracy': 0.97288, 'precision': np.float64(0.9657758173326414), 'recall': np.float64(0.9639250012948671), 'f1\_score': np.float64(0.9648495217357492)}

Variance of Numerical Features:

Num\_Children: 1.9882564969649696

Income: 528038693.06598526

Fairness Metrics:

Attribute: Gender

Statistical Parity: {'Female': 0.1947768661196718, 'Male': 0.5757945232860284}

Equal Opportunity (TPR): {'Female': 0.9264389042782395, 'Male': 0.9765822565559289}

Equalized Odds (TPR): {'Female': 0.9264389042782395, 'Male': 0.9765822565559289}

Equalized Odds (FPR): {'Female': 0.01747756258856873, 'Male': 0.029107404432263857}

Attribute: Own\_Car

Statistical Parity: {'No': 0.2897693079237713, 'Yes': 0.42620915965187617}

Equal Opportunity (TPR): {'No': 0.9480861792344717, 'Yes': 0.9685492505353319}

Equalized Odds (TPR): {'No': 0.9480861792344717, 'Yes': 0.9685492505353319}

Equalized Odds (FPR): {'No': 0.018598942598187312, 'Yes': 0.02300880553206308}

Attribute: Own\_Housing

Statistical Parity: {'No': 0.3182944801714898, 'Yes': 0.4848590150913423}

Equal Opportunity (TPR): {'No': 0.9547342411019399, 'Yes': 0.9728474455162558}

Equalized Odds (TPR): {'No': 0.9547342411019399, 'Yes': 0.9728474455162558}

Equalized Odds (FPR): {'No': 0.020790838268904672, 'Yes': 0.0228557622614158}

Attribute: Income\_Category

Statistical Parity: {'High': 0.7326527508459755, 'Medium': 2.1097936621798388e-05}

Equal Opportunity (TPR): {'High': 0.9703329075314789, 'Medium': 0.0}

Equalized Odds (TPR): {'High': 0.9703329075314789, 'Medium': 0.0}

Equalized Odds (FPR): {'High': 0.09253668468721477, 'Medium': 2.121205693316081e-05}

Subgroup Accuracy by Sensitive Attribute:

Attribute: Gender

Male: 0.9741754947031781

Female: 0.9715829497698619

Attribute: Own\_Car

Yes: 0.9733913539734627

No: 0.9716817118020729

Attribute: Own\_Housing

Yes: 0.9750546068308181

No: 0.9714127813504824

Attribute: Income\_Category

High: 0.9533097600851679

Medium: 0.9945989282248197