AI Bias Assessment Checklist

1. Data collection and preparation

☐ **Sampling bias.** Does your data set represent the population the model will encounter?

☐ **Exclusion bias.** Are all relevant variables or populations included?

☐ **Measurement bias.** Are the data sources accurate, consistent and free from systemic errors?

☐ **Temporal bias.** Does the data set reflect current conditions, trends and behaviors?

☐ **Data auditing.** Have you conducted regular audits for imbalances, missing features and inaccuracies?

☐ **Preprocessing.** Have you applied techniques such as reweighting, resampling and inputting missing data to reduce bias?

2. Model design and development

☐ **Algorithmic bias.** Could the model design or optimization objectives create biased outcomes?

☐ **Confirmation bias.** Were assumptions and preconceptions tested during feature selection, labeling and metric choice?

☐ **Fairness-aware algorithms.** Have fairness constraints and optimization methods been applied to ensure equitable outcomes?

☐ **Explainability.** Are model decisions interpretable to identify sources of bias?

☐ **Postprocessing.** Are outputs adjusted to correct disparities without retraining the entire model?

3. Testing and validation

☐ **Bias metrics.** Have you applied fairness metrics, such as demographic parity, equalized odds and disparate impact, to quantify bias?

☐ **Scenario testing.** Have models been tested across diverse scenarios and user groups to identify adverse effects?

☐ **Edge cases and minority groups.** Have you examined performance on underrepresented or vulnerable populations?

☐ **Temporal robustness.** Will the model maintain fairness over time with evolving patterns?

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4. Deployment and human oversight

☐ **Automation bias.** Are humans reviewing AI outputs in high-stakes decisions?

☐ **Human in the loop.** Is there a process for humans to validate or override AI decisions?

☐ **Monitoring.** Is the model continuously monitored for bias, especially in changing environments and populations?

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5. Governance and team composition

☐ **Responsible AI roles.** Is there an appointed AI ethics lead or governance structure to oversee bias mitigation?

☐ **Diverse teams.** Is the oversight team diverse in expertise, demographics and perspectives to identify blind spots?

☐ **Inclusive collaboration.** Are team members encouraged to challenge assumptions and flag potential biases?

☐ **Stakeholder engagement.** Are external stakeholders involved in reviewing fairness, especially for high-impact applications?

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6. Impact assessment and risk management

☐ **Bias impact analysis.** Have you assessed the groups or decisions that could be most affected by bias?

☐ **Regulatory and legal risks.** Are potential violations of anti-discrimination laws considered and mitigated?

☐ **Ethical implications.** Are societal inequalities and fairness principles considered in model decisions?

☐ **Reputational risks.** Have potential public perception issues been evaluated and addressed?

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7. Training and organizational culture

☐ **Bias awareness.** Are teams trained to recognize and counteract AI system bias?

☐ **Ethical practices.** Is fairness an embedded, core principle across development, deployment and evaluation?

☐ **Accountability.** Are responsibilities for bias oversight and mitigation assigned at every stage of the AI lifecycle?

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8. Emerging technologies

☐ **Automated ML.** Are bias checks integrated into autoML model development pipelines?

☐ **Edge AI.** Have models been validated across diverse real-world environments and populations?

☐ **Continuous audit.** Are audits and fairness assessments planned for models deployed on edge devices and automated pipelines?

Tip: Assign each checklist item a status (not started, in progress, complete) and document evidence or corrective actions for auditing and compliance purposes.