| **Tool** | **Integration Point with Streamlit and Overall Workflow** |
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| **Streamlit** | Provides the user interface for input submission and displaying predictions; acts as the frontend to the whole ML system. |
| **Jupyter** | Used for initial exploration, prototyping, and experimentation before formalizing pipelines or deploying models to Streamlit. |
| **MLflow** | Loads latest model version for prediction; optionally links back to model run details for transparency. |
| **Postgres** | Logs user inputs and predictions from Streamlit for audit, traceability, and analytics. |
| **Prefect** | Can be triggered from Streamlit UI to start retraining or data update workflows as needed. |
| **Prometheus** | Receives metrics from Streamlit such as prediction counts, response times, and error rates. |
| **Grafana** | Visualizes Prometheus metrics including usage and performance patterns of the Streamlit app. |
| **Evidently** | (Optional) Uses prediction data coming through Streamlit for drift detection and monitoring model quality over time. |