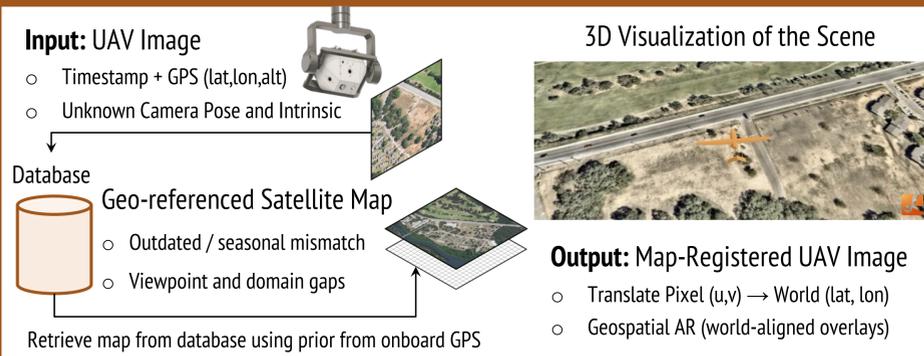
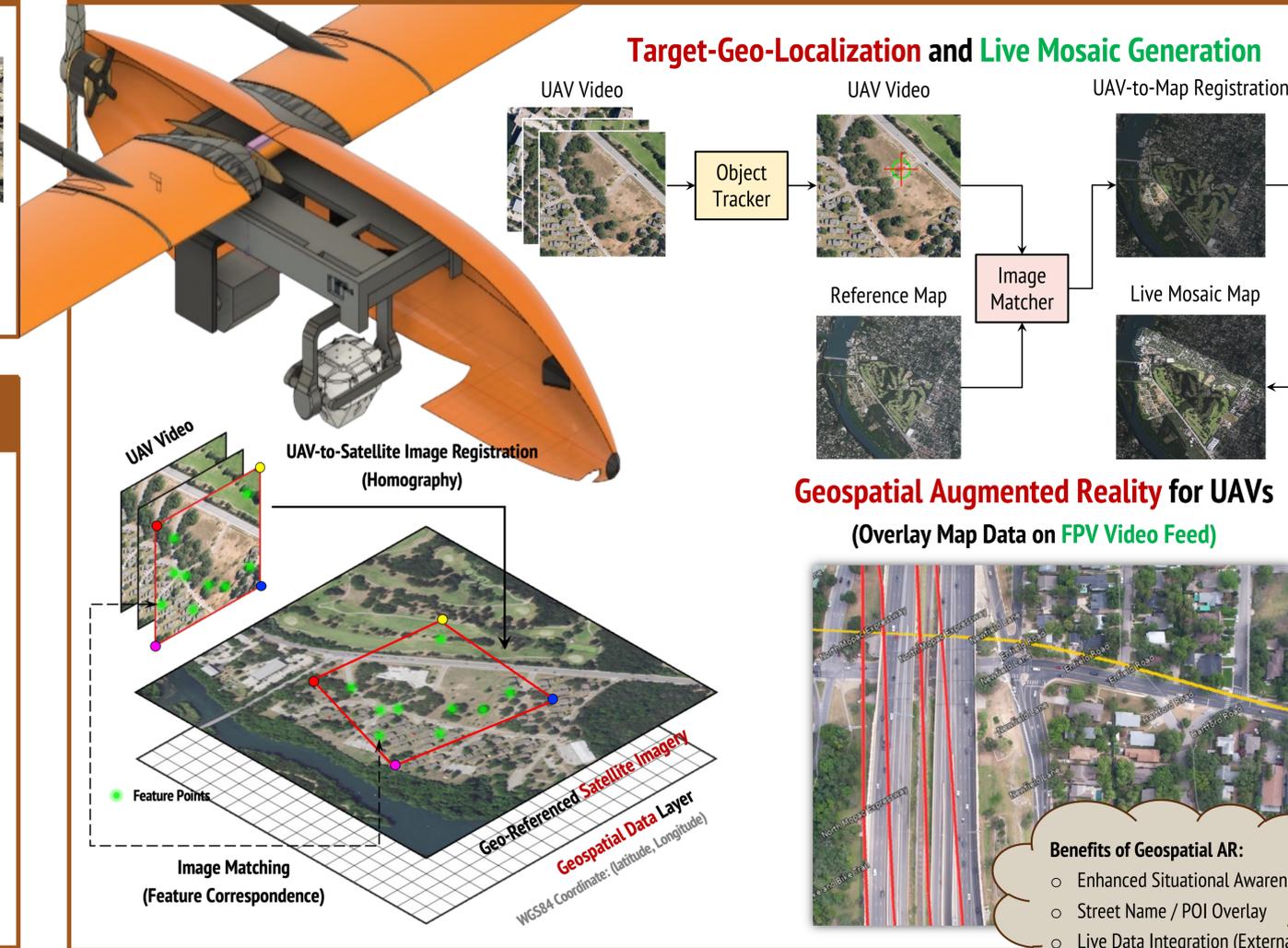


Motivation: Object detection provides **pixel locations (u, v)** within image frame; we translate them into **world coordinates (lat, lon)**, defining a **new task** called **Air-to-Ground Target Geo-Localization**

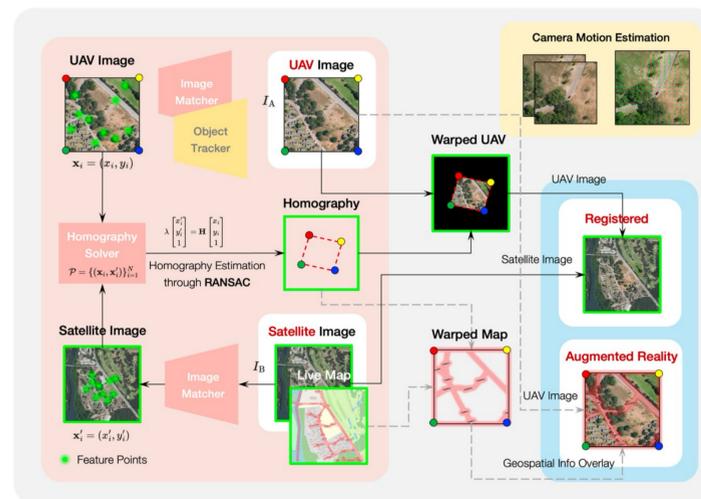
Problem Solved: UAV-to-Map Image Registration



Core Applications & Capabilities



Methodology & Framework



New Dataset for Air-to-Ground Target Geo-Localization



Summary of Impact

- Introduce a **new task**: UAV air-to-ground target geo-localization
- Release the **first real-world dataset** for this task with paired aerial-ground data
- Propose **AirLock+**: Our end-to-end system achieves an average target localization error of 20.23 meters across 7.8 km of real-world trajectories

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