

SUPPLEMENTAL PROJECT · ONE-PAGE SUMMARY

PrivacyScrub V5: Video Redaction for Compliance

Bodycam, surveillance, and evidentiary footage cannot be released, shared, or used for training until faces and plates are scrubbed: a real, funded compliance need across government, defense, and regulated industry. PrivacyScrub is a production-style, GPU-accelerated service that detects, tracks, and anonymizes faces and license plates across long-form video.

Role: Systems Architect · ML Engineer · Deployment & Monitoring

Stack: Python · FastAPI · Streamlit · YOLOv8-X · DeepSORT / Re-ID · OpenCV · FFmpeg · GCP (Cloud Run, Cloud Tasks / Pub/Sub, Firestore, GCS) · Terraform

Links: github.com/burnsgregm/privacyscrub-v5 · privacyscrub.streamlit.app

WHAT IT IS

A Cloud Run microservice architecture: Streamlit front end, FastAPI gateway, an orchestrator that chunks long video with FFmpeg, GPU workers running detection and tracking, and a stitching stage that emits a redacted, share-safe asset with metadata stripped.

KEY CAPABILITIES

- **Detection:** YOLOv8-family models for faces and license plates.
- **Consistent identity handling:** DeepSORT-style tracking plus Re-ID embeddings keep the same person or vehicle anonymized across occlusions and re-entries.
- **Long-form video:** chunked processing and stitching handle multi-minute footage without timeouts.
- **Job lifecycle:** explicit states (QUEUED, CHUNKING, PROCESSING, STITCHING, COMPLETED, FAILED) with idempotent handling.
- **Configurable policy:** per-class anonymization (blur faces, solid-mask plates), smoothing and interpolation to avoid flicker.
- **Safe to change:** SRS+TDD assets and shift-left CI gating so regressions are caught before deploy.

KEY OUTCOMES

GPU

Accelerated detection workers

Chunk + stitch

Multi-minute video, no timeouts

Share-safe

Redacted asset, metadata stripped

BUSINESS IMPACT

Turns footage an organization cannot legally release into an asset it can share, analyze, and train on, replacing manual frame-by-frame redaction that does not scale. Commercial teams get the same relief on screen recordings and training video.