Workflow Video Analysis Pipeline: Identifying AI Automation Opportunities Layer 7 Systems — February 2026

Objective. Identify tasks across the organization that are strong candidates for AI-assisted automation (Gemini, prompts, integrations). Employees record workflows via L7S Workflow Capture; this pipeline extracts structured data from those recordings to surface **what work looks like**, **where time is spent**, and **which tasks are repetitive, predictable, or painful enough to automate**.

Problem. We don't know which tasks are good automation candidates. Employees have intuitions, but we lack data. Video recordings show real workflows—but we can't watch them all. We need to convert raw footage into structured, queryable evidence that reveals where AI can add value.

Solution. A pipeline converting each video into one row of structured data: (1) parse filename metadata, (2) extract 35 frames via ffmpeg, (3) analyze frames with Gemini Vision API, (4) append results to CSV. The dataset surfaces automation opportunities through patterns in actions, app usage, and workflow structure.

Feature Space (19 fields per video):

Field	Type	Source	Description
From Filename			
`video_id`	string	derived	Unique hash for dedup
`username`	string	folder	Who recorded
`timestamp`	datetime	filename	When started
`machine_id`	string	filename	Workstation
`task_description`	string	filename	User's stated task
`day_of_week`, `hour_of_day`	string, int	derived	Temporal patterns
From Video File			
`duration_sec`	int	ffprobe	Recording length
`file_size_mb`	float	filesystem	Activity proxy
From Gemini Vision			
`primary_app`	string	Gemini	Most-used application
`app_sequence`	JSON	Gemini	Ordered list of apps
`detected_actions`	JSON	Gemini	Actions (data entry, copy-paste, etc.)
`friction_events`	JSON	Gemini	Pain points (errors, repeated steps)
`friction_count`	int	derived	Number of friction events
`automation_score`	float 0–1	Gemini	AI automation potential
`workflow_category`	string	Gemini	Task classification
From ActivTrak (joined by username + date)			
`activtrak_productive_pct`	float	ActivTrak	Productivity ratio
`activtrak_idle_min`	int	ActivTrak	Idle/wait time
`activtrak_top_apps`	JSON	ActivTrak	Top apps by time

ML Readiness. All fields usable: numeric fields directly; categorical strings via label encoding; JSON arrays via multi-hot encoding (presence vectors) or count vectors. Task descriptions can be vectorized via TF-IDF or embeddings for semantic clustering.

What This Enables. Standard ML to find automation candidates: **clustering** groups similar workflows (same task across users); **classification** tags by type/department; **ranking** by automation_score + friction_count surfaces top opportunities; **correlation** links workflow patterns to productivity. No custom model training—just structured queries and off-the-shelf algorithms.

Key Questions Answered. Which tasks are highly repetitive? Which involve manual data transfer between apps? Which tasks do multiple users perform the same way (standardizable)? Which have high friction that AI could eliminate? Where do users spend time on work Gemini could assist with (summarization, lookup, generation)?

Non-Goals. This produces data and recommendations, not automation itself. Output is a dataset and insights report identifying where to deploy AI tools—decisions remain human.

Cost. $3.50/day at 100 videos ($105/month). **Timeline.** 7 days to pipeline + first insights report.

Deliverable. (1) Automated pipeline, (2) populated dataset, (3) report ranking automation opportunities with evidence: which tasks, which users, how often, estimated impact.

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