

CHRISTIAN GAYA

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Controls Lead, B4.5 & X15 | Datalinks SME | Self-Initiated Tool Builder

Seven years at Cummins working the off-highway service-diagnostics loop end to end: field-issue triage and escalation, root-cause investigation, Datalinks SME analysis, and controls program leadership for the B4.5 and X15 products. Self-initiated and shipped three internal platforms (a J1939 trace-analysis tool, a workflow-orchestration platform, and a provenance-aware diagnostics-retrieval application) that turn fragmented service knowledge into structured, source-traceable evidence, the grounding a reliable AI service agent depends on. Early adopter of company-approved generative AI for code development, diagnostics research, and technical documentation.

CORE COMPETENCIES

AI & Automation: AI-assisted software development · prompt design & shared prompt templates · multi-source technical research · human-in-the-loop workflow design · controlled pilot & evaluation design

Software Engineering: Python · SQLite/FTS5 · Tkinter · VB.NET · Excel VBA · PowerShell · Git · regex · PyInstaller packaging · automated regression testing · release pipelines with SHA-256 artifact verification · Outlook/Office automation

Diagnostics & Controls: J1939/CAN (PGN · SPN · FMI · TPCM) · PCAN trace analysis · Calterm · fault-code investigation · calibration & DCR analysis · RDE/MDL diagnostics · datalogger evidence · root-cause isolation · bench-test validation

Service Operations: ServiceNow triage & SLA management · Level 1-3 RACI escalation-path design & operation · authoritative knowledge-base curation · global cross-functional coordination · stakeholder forums · mentoring & succession planning

PROFESSIONAL EXPERIENCE

CUMMINS INC. | Off-Highway Controls

Columbus, IN / Remote | Jul 2019 – Present

Promoted through four roles of increasing scope. Application-support involvement since the process began in 2020, rising from participant to process lead, and Datalinks SME ownership span these roles; the internal engineering applications below were built and evolved across them.

Controls Lead

Jul 2025 – Present

- Lead controls development for the B4.5 and X15 off-highway products: build and maintain milestone schedules, coordinate deliverables across controls development, integration, and field test, and align SMEs and cross-functional stakeholders through mid-program priority and scope changes.
- Designed and deployed OFC Lookup (below), consolidating fragmented diagnostic sources into a curated, source-grounded retrieval application in regular team use for troubleshooting lookups. Integrated into a workflow with a defined evaluation target for reducing diagnostic investigation time, designed to keep human review and established escalation paths in the loop.
- Lead the recurring off-highway application-support forum; continue Datalinks SME contributions in a support-and-review capacity following the leadership handoff, integrating evolving connectivity and cybersecurity requirements into investigations and stakeholder planning.

Controls Technical Specialist

Jul 2023 – Aug 2025

- Led the off-highway application-support process, maintaining visibility across 600+ team-level field issues logged since 2020; personally owned 107 assigned tickets in the current ServiceNow extract (Aug 2023 to current).
- Coordinated U.S.- and India-based engineering coverage for global triage, in collaboration with the UK Controls team.
- Designed a structured service-diagnostic workflow covering intake, triage, owner assignment, evidence capture, Level 1-3 RACI escalation paths, stakeholder updates, and closure, with severity-based expert routing and clear human-escalation boundaries.
- Ran controlled pilots of Zenith Tracker (below) through its alpha cycle and beta-ready builds: closed 30+ enhancement and defect items and incorporated 11 formal user-feedback submissions, shipping iterative releases through a closed user-feedback loop.
- Early adopter of company-approved generative AI, recognized by management for applying it to code analysis, troubleshooting plans, research across multiple Cummins databases, and field-support documentation; shared reusable prompt templates across the team.
- Sustained Datalinks SMA delivery through the loss of four experienced resources by retraining replacements and renegotiating commitments; built a succession plan, trained and developed multiple backup SMEs into what is now a five-person team, and executed a full operational handoff without delivery disruption.
- Mentored two new controls engineers through structured biweekly coaching to independent ticket progression; onboarded two application-support engineers and provided on-site support during a customer IQA field activity.

Senior Controls Engineer - Electronic Systems Product Engineering

Aug 2021 – Jul 2023

- Served as Datalinks SME across off-highway programs: led DCR analysis, DCR test analysis, calibration analysis, and RDE/MDL diagnostic analysis, capturing cross-program learnings into reusable issue-resolution documentation.

- Acted as a liaison between Application Engineers and controls and calibration SMEs in recurring stakeholder and application-support forums, converting field concerns into owned actions, investigations, and escalation decisions.
- Investigated field-facing controls and calibration issues, including fault-code interpretation, calibration comparison, hardware-versus-calibration isolation, and bench-test validation, in partnership with Application Engineers and cross-functional SMEs.

Controls Engineer

Jul 2019 – Aug 2021

- Launched full-time career in Off-Highway Controls through a cross-functional rotational program spanning calibration, software, the Komatsu OEM team, the Features team, and applied controls, building end-to-end perspective across the controls development lifecycle.
- Joined the off-highway application-support process at its 2020 start, triaging and investigating field-facing controls and calibration issues alongside Application Engineers; built the J1939/Datalinks depth that grew into team SME ownership.

CUMMINS INC. | Nissan Controls Team (Internship)

Columbus, IN | May 2018 – Aug 2018

- Built high-rate CAN data-acquisition scripts and analysis software (concatenation, limit, misfire, and special diagnostics) for CANape-acquired field data; presented results to controls group leaders and managers.

SELF-INITIATED ENGINEERING APPLICATIONS

OFC Lookup: Diagnostics Knowledge & Retrieval Platform *(Python · SQLite/FTS5 · Tkinter; most recent tool, AI-assisted development)*

- Built and hardened a local-first desktop application unifying diagnostic search across 3,212 PGNs, 33,179 SPNs, 1,639 indexed faults, 35,516 parameters, FFS/TIS service data, and emissions-support evidence, with source provenance, match-class transparency, and raw-evidence views so every result is traceable to its authoritative source.
- Curated heterogeneous sources (build tables, J1939 data, legacy Calterm/Fault Analyzer XML, service-fault descriptions) into a read-only SQLite knowledge product: data modeling, alias reconciliation, and quality corrections (204 recovered fault rows; 180 inserts and 18 updates to Stage V emissions evidence) with page-level traceability.
- Owned the end-to-end solution design, from user experience and data model to packaging, deployment, and operational handoff: a PyInstaller/PowerShell release pipeline with SHA-256 artifact verification, version-manifest auto-updates, and automated regression self-tests. Cut warm launch from 2.3 s to 0.9 s, autocomplete to a ~1 ms median, and cold companion-tool handoff from 8+ s to ~2 ms, eliminating a duplicate 268 MB database copy.

Zenith Tracker: Engineering Workflow-Orchestration Platform *(Excel VBA · Outlook automation; AI-assisted development)*

- Architected a modular VBA application converting fragmented email- and spreadsheet-based task tracking into structured program-and-task state with role-aware routing, deadline-status logic, automated Outlook notifications, dashboards, data migration (import/export), archiving, and a regression-oriented test harness.
- Established “one version of the truth” for program changes, task ownership, and troubleshooting history for the off-highway programs piloted in the tool, iterating on user feedback in near-real time.

Trace Converter: J1939 Trace-Analysis Automation *(VB.NET · Windows Forms · Git; first tool, built without AI assistance)*

- Automated a previously manual, expert-only CAN-trace analysis process: parses PCAN traces and J1939 symbol files, performs bit-level SPN extraction across byte boundaries, PDU1 normalization, TPCM transport-protocol handling, and duplicate suppression, then applies deterministic rules to classify SPN support. Metadata-driven, so the same workflow analyzes different controller configurations without hard-coding each program’s signal set.

EDUCATION

B.S., Computer Engineering, FAMU-FSU College of Engineering, Florida State University

2019