

RENAN FERNANDES

Backend and Systems Engineer | Go | AI Architecture | Mission Critical Systems

Curitiba, Paraná, Brazil | UTC-3 | Open to international remote opportunities

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PROFESSIONAL SUMMARY

Backend and systems engineer with 8+ years of experience, including approximately four years at senior level, delivering and modernizing mission-critical enterprise software. Go-focused developer and technical reference for complex system behavior, impact analysis, root-cause investigation and high-risk changes. Designs secure, human-reviewed agentic AI workflows while retaining responsibility for architecture, validation, testing and final decisions.

CORE SKILLS

Primary: Go, COBOL, SQL, REST APIs, Git, backend architecture and automated testing

AI engineering: Agent architecture, AI-assisted development, context design, custom skills and templates, evidence traceability, confidence classification and human review

Systems: Unisys ClearPath, DMSII, indexed files, online and batch processing, Azure DevOps, Linux, Windows and shell scripting

Additional: TypeScript, JavaScript, Java, HTML, CSS, Home Assistant and Proxmox

PROFESSIONAL EXPERIENCE

Senior Application Development Engineer | Unisys

2022 - Present

Remote

- Develop, maintain and modernize enterprise COBOL applications supporting CAIXA Econômica Federal housing and banking operations.
- Act as a technical reference for complex system behavior, business-rule tracing, impact analysis and programs requiring architectural or structural refactoring.
- Investigate urgent production incidents across online and batch environments, correcting root causes rather than applying temporary workarounds.
- Analyze and refactor application logic with more than three decades of accumulated technical and business complexity while preserving operational stability.
- Guide developers across experience levels and collaborate with business analysts, QA teams and functional stakeholders on regulatory and operational changes.
- Adapted COBOL unit-testing tooling for the Unisys environment and integrated execution and JUnit-compatible results into Azure DevOps workflows.
- Designed and implemented an approved, human-reviewed agentic AI proof of concept for preserving knowledge in a legacy banking environment; follow-up evaluation is planned for adoption as a core project tool.

Full Stack Developer | G3Sistemas LTDA

2018 - 2022

On-site

- Developed and maintained COBOL and Java ERP and financial systems for agro-industrial businesses, retail operations, factories and fuel stations.
- Led migration of approximately 80% of indexed-file data structures to DBMaker databases, resolving distinct data-handling constraints across migrations.
- Modernized legacy applications, supported COBOL-to-Java integrations and contributed to LGPD-related data-handling and security adaptations.
- Trained junior developers, supported users and resolved production problems across a broad business-critical ERP environment.

SELECTED ENGINEERING WORK

Agentic Documentation Architecture for Legacy Systems | *Anonymized banking case study*

- Designed an end-to-end architecture connecting dependency analysis, constrained agent execution, versioned knowledge artifacts and human validation.
- Built Go metadata extraction and structured Markdown documentation with stable business-rule IDs, code-level evidence, confidence classifications and explicit review questions.
- Demonstrated two internal programs through a static portal with a catalog, dependency map, glossary and version comparison, using approved internal model tooling.

Taskemon | *Go backend* | [GitHub](#)

- Expanded a self-hosted task manager into a multi-user Go API with SQLite migrations, ownership boundaries, settings, statistics and optional ESC/POS printing.
- Implemented Argon2id authentication, browser sessions, API keys, CSRF protection, rate limiting, image validation, external API caching and security-focused regression tests.

Hearthplan | *Local-first 3D planning application* | [GitHub](#)

- Built terrain, paving, building, material, claim and route-planning systems with persistence, undo and redo, validation and regression coverage.
- Developed a reviewed game-asset pipeline and investigated rendering performance, resource ownership and large-map behavior.

Home Automation and Homelab | *Ongoing systems engineering hobby*

- Built a Proxmox homelab for local hosting, storage and encrypted backups, plus API-controlled computers integrated with Home Assistant.
- Created custom dashboards and privacy-conscious automations for sensors, appliances, cameras, media, notifications and physical devices.

EDUCATION

Information Systems coursework | Community University of the Chapecó Region - Unochapecó

LANGUAGES

Portuguese - Native | English - Advanced professional proficiency with strong spoken communication | Spanish - Intermediate comprehension with limited speaking ability