Carlos Gorricho - Technical Portfolio

Product Engineer | Identity Verification & AI Systems

STRONG FIT FOR KYXSTART

I bridge business strategy and technical execution—a combination that's relevant for a product engineering role requiring both customer understanding and hands-on development capability.

Recent Work:

- Built 3 production-grade AI systems in 2024-2025 (code available on GitHub)
- 25+ years translating business requirements into technical solutions
- Experience with financial services, manufacturing, and agribusiness compliance needs
- Demonstrated ability to ship: 3,000-line production dashboard delivered in 2 weeks

Relevant to KYXStart:

- Understanding of KYC/KYB compliance challenges from working with regulated industries
- Experience building customer-facing AI products (RAG chatbot, analytics platforms)
- Can participate in architecture discussions while implementing solutions
- Track record of shipping quickly without compromising quality

---

RECENT TECHNICAL PROJECTS (2024-2025)

1. HUNGERHUB ANALYTICS DASHBOARD

Live Demo: https://hungerhubdash.techbridge.org
Timeline: 2 weeks from requirements to production
Context: 20-year-old food donation network with no meaningful reporting capability

Technical Implementation:

```
Architecture:
├── Data Source: Oracle Database (transactional system)
├── ETL Pipeline: Python extraction → Parquet data lake
├── Processing: pandas data transformations
├── Visualization: Plotly Dash (3,000 lines)
└── Deployment: Real-time dashboard on production server
```

Implementation Details:

- Designed complete data architecture from source to visualization
- Built AI-assisted development framework using dual-agent system
- Developed full application in Python/Dash (3,000 lines)
- Deployed to production environment
- Result: First comprehensive analytics in 20 years of operations

Technical Stack:

- Python (pandas, plotly, dash)
- Oracle Database connectivity
- Parquet data format
- Data engineering (ETL pipelines)
- Production deployment

Demonstrates:

- Ability to translate business requirements into working systems
- Full-stack capability (data → logic → visualization)
- Fast delivery without sacrificing quality
- Direct customer engagement and needs assessment

---

2. WORDPRESS ECARD PLUGIN REFACTORING

Repository: https://github.com/DolphinDigital/dolphin-ecard-2025v2
Key Directory: `/ai-agents/` (contains AI development framework)
Timeline: 8 weeks, 8 phases with quality gates

Context: 5,000+ line unmaintainable WordPress plugin with security vulnerabilities blocking new feature development

Technical Approach:

```
AI Agent Framework:
├── Builder Agent: Executes refactoring phases
├── Quality Reviewer Agent: Tests and validates
├── Gated Progression: No merge without approval
├── Documentation: Complete traceability
└── Result: 172% quality improvement (3.6/10 → 9.8/10)

Refactoring Results:
├── 5,269-line God class → 400-line modular class (92% reduction)
├── Monolithic AJAX handler → 6 specialized handlers
├── 0% test coverage → 85% with 134 tests
├── Basic security → Enterprise-grade implementation
└── Manual assets → Modern Webpack 5 build system
```

Implementation Details:

- Designed AI agent collaboration system (documented in `/ai-agents/agent-collaboration/`)
- Architected service-oriented transformation
- Implemented comprehensive testing framework (134 tests)
- Built modern asset pipeline (Webpack 5)
- Maintained 100% backward compatibility throughout
- All phases achieved 9.5-9.9/10 quality scores

Technical Stack:

- PHP (WordPress ecosystem)
- JavaScript ES6+ (modular architecture)
- SCSS (modern CSS)
- Webpack 5 (build optimization)
- PHPUnit (testing framework)
- Git workflows (branch management, PRs, reviews)

Demonstrates:

- System architecture design and implementation
- Software engineering principles (SOLID, testing, documentation)
- Quality assurance process development

- Modern development practices
- Legacy system transformation

Technical Innovation: Developed comprehensive AI agent framework (see `ai-agents/agent-collaboration/20250926-0641_ai_collaboration_rules_of_engagement.md`):

- 23,000-word specification for AI-to-AI collaboration
- Builder-Reviewer pattern with quality gates
- Documentation and traceability standards
- Risk mitigation strategies
- Zero critical bugs introduced across 8 phases

---

3. AGENTIC RAG CHATBOT (PINECONE)

Repository: https://github.com/cgorricho/agentic-RAG-Oben-Pinecone
Status: Production POC, currently in use by operations staff

Context: Manufacturing maintenance staff unable to effectively use complex OEM equipment manuals due to language barriers and technical complexity

Technical Implementation:

```
RAG Architecture:
├── Vector Database: Pinecone (hybrid dense + sparse search)
├── Embeddings: OpenAI (semantic understanding)
├── LLM: GPT-4 (response generation)
├── Framework: LangChain (agentic RAG)
├── Frontend: Streamlit (user interface)
├── Auth: Google OAuth (secure access)
├── Database: Supabase (sessions, surveys, usage tracking)
└── Infrastructure: VPS + nginx + SSL + reverse proxy
```

Implementation Details:

- Architected hybrid vector search strategy using Pinecone's dense + sparse embeddings
- Implemented multi-agent RAG system (retrieval coordination + generation)
- Built complete production infrastructure (VPS, nginx, SSL, authentication)
- Designed comprehensive logging (multi-level, JSON-formatted, performance tracking)
- Deployed to production with monitoring and user management

Technical Stack:

- Python (core application)
- Streamlit (web interface)
- Pinecone (vector database)
- LangChain (AI orchestration)
- OpenAI GPT (language model)
- Supabase (PostgreSQL backend)
- nginx (reverse proxy)
- Linux VPS (Ubuntu)
- Google OAuth (authentication)

Demonstrates:

- Modern AI architecture understanding (RAG, vector search, embeddings)
- Production deployment capability (infrastructure, security, monitoring)
- End-to-end solution development (backend → AI → frontend → deployment)
- User-focused design (solved actual business problem)
- Production-grade implementation (logging, authentication, error handling)

Technical Decision: Selected Pinecone's hybrid dense + sparse embedding approach over standard semantic search for improved context retrieval in technical documentation. Implemented performance tracking to validate improvement over baseline approaches.

CAPABILITIES RELEVANT TO KYXSTART

Product Architecture & Development

- Solution design: Translating business requirements into technical architecture
- Implementation: Building core features, not just specifying them
- AI integration: Experience with RAG architectures, vector search, LLM orchestration
- Full stack: Backend (APIs, databases) through frontend (user interfaces)

Customer Context

- 25+ years in C-suite roles with direct exposure to customer pain points
- Financial services experience: Banks, agribusiness, manufacturing (all require KYC/KYB)
- Compliance understanding: Regulatory requirements, audit trails, data security

- Product thinking: Focus on solving actual customer problems

Execution

- Speed: 3,000-line dashboard in 2 weeks, comprehensive refactoring in 8 weeks
- Quality: 172% quality improvement metrics, 85% test coverage, enterprise security
- Documentation: Comprehensive technical documentation for maintainability
- Best practices: Testing, code review, deployment processes

Business + Technical Bridge

- Communication: Can discuss ROI with executives, architecture with engineers
- Product decisions: Understanding feature prioritization based on business value
- Technical debt: Knowing when to move fast versus build for scale
- Stakeholder management: Experience with boards, executives, technical teams

---

TECHNICAL COMPETENCIES

AI & Machine Learning

- RAG architectures (Retrieval-Augmented Generation)
- Vector databases (Pinecone, embeddings)
- LangChain framework
- Agentic systems design
- Prompt engineering
- AI-assisted development workflows

Programming & Development

- **Python:** pandas, NumPy, Plotly, Streamlit, FastAPI, LangChain
- **JavaScript:** ES6+, modern frontend patterns
- **PHP:** WordPress ecosystem, service-oriented architecture
- **SQL:** Query optimization, database design
- **Others:** R, Golang

Architecture & Systems

- Service-oriented architecture

- API design and integration
- ETL pipeline design
- Data lake architectures (Parquet)
- Microservices concepts
- Event-driven patterns

Infrastructure & DevOps

- Linux/Ubuntu server management
- nginx (reverse proxy, SSL)
- VPS deployment and configuration
- Authentication systems (OAuth)
- Logging and monitoring
- Git workflows (branching, PRs, code review)

Databases & Data

- Relational: Oracle, PostgreSQL, MySQL
- Vector: Pinecone
- Cloud: Supabase
- Data formats: Parquet, JSON, CSV
- Data engineering: ETL, transformations, optimization

DIFFERENTIATORS

1. Working Code

Production systems available for review:

- HungerHub: https://hungerhubdash.techbridge.org (live dashboard)
- WordPress Plugin: https://github.com/DolphinDigital/dolphin-ecard-2025v2 (21K+ lines)
- RAG Chatbot: https://github.com/cgorricho/agentic-RAG-Oben-Pinecone (production POC)

2. Business Understanding

25+ years of C-suite experience provides context for:

- $1.75B capital raises

- $500M CAPEX projects
- P&L management and operational excellence
- Compliance, risk management, stakeholder value

3. Customer Focus

Systems built to solve actual problems:

- HungerHub addressed 20-year reporting gap
- RAG chatbot bridged language and technical barriers
- WordPress refactoring enabled future feature development

4. Quality + Speed

Demonstrated ability to ship quickly while maintaining standards:

- 2-week dashboard delivery (production-ready)
- 8-week comprehensive refactoring (9.8/10 quality)
- AI-assisted development for velocity
- Test coverage, security, documentation as baseline practices

5. Continuous Learning

Recent technical skill development:

- McCombs School (UT Austin) AI/ML postgraduate certification (2022-2023)
- Modern web frameworks and deployment practices
- Production systems in new technologies
- Active GitHub contributions and modern DevOps practices

QUESTIONS FOR CTO DISCUSSION

1. **Architecture:** Current tech stack for KYX verification? How are data source queries orchestrated?
2. **AI Integration:** Plans for LLM integration for data-driven decisions? Thinking about RAG architecture?
3. **Scale:** Performance requirements? (queries per second, latency targets, global distribution)
4. **Development Process:** Current SDLC? Testing approach? Balance between speed and quality?
5. **Product Roadmap:** Features planned for next 6 months? Where could technical contributions add most value?
6. **Team Dynamics:** How does product engineering interface with business development? With customers?

NEXT STEPS

Available to discuss:

- Specific architecture challenges you're solving
- Technical approaches to current product roadmap
- How my background could complement your team

Resources for Review:

- GitHub repositories (architecture decisions, implementation, documentation)
- HungerHub dashboard (UI/UX approach)
- AI agent framework (system design methodology)

Contact:

- Email: gorricho2009@gmail.com
- Phone: +1 (470) 513-9530
- LinkedIn: linkedin.com/in/carlosgorricho
- GitHub: github.com/cgorricho

This document highlights recent technical work (2024-2025). Complete executive background available in resume.