CHRISTIAN MACION AI Engineer | Quantitative Researcher | Multi-Agent LLM Systems & Statistical Modeling

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SUMMARY

AI Engineer and Quantitative Researcher with hands-on experience operating at the intersection of multi-agent LLM systems and systematic trading research. I previously served as an AI Systems Engineer / Quantitative Researcher on the systematic-strategy desk (NDA-protected; closed past contract 03/2026 - 06/2026) (PM with publicly attributable initials, NDA-protected desk), where the AI platform did the quant work : eleven agents in an orchestrator-worker topology, a 31-gate statistical evaluation harness, tiered model routing, and ~76,500 LOC of light-dependency Python : and the eval harness served both the LLM outputs and the systematic strategies running through it.

In that engagement I evaluated 40+ strategy families across 5 asset classes (equity-index, crypto, energy, metals, agriculture) on a 31-gate statistical-filter platform, built 10+ point-in-time data pipelines from scratch on free public sources, and implemented modern selection-bias statistics (Deflated Sharpe Ratio, PBO via CSCV, Minimum Backtest Length) in pure numpy. I shipped the same multi-agent architecture to a venture-incubation system and a content pipeline with a literature-grounded quality gate, and authored the curriculum that teaches others how to build and audit their own.

Skilled in Python for finance and AI engineering (numpy, pandas, matplotlib, boto3), statistical modeling and AI evaluation harnesses, multi-agent orchestration (Claude Agent SDK / MCP), structured-output contracts, RAG with measured retrieval quality, model routing, and cost-aware LLM deployment. Strong understanding of pre-registration, walk-forward testing, block-bootstrap CIs, Monte-Carlo, Sharpe ratios, drawdowns, risk management, eval-gate design, and adversarial verification across equities, forex, commodities, and cryptocurrency markets.

Recognized for combining analytical thinking, eval-first engineering, structured research methodologies, AI-assisted workflows, and clear technical writing to support data-driven decision-making, research accuracy, and team velocity. Available 30 hrs/wk for an AI Engineer / Quantitative Researcher role that lets me apply the same ship-it / kill-it-honestly / bank-the-lesson workflow to a new domain.

CORE SKILLS

- Multi-Agent Orchestration (orchestrator-worker / supervisor-worker)
- LLM Evaluation Harness Design
- Model Routing & Token-Cost Optimization
- Context Engineering
- Structured-Output Contracts & Validation
- Tool Use / Function Calling
- RAG / Chunking / Source-Grounded Generation
- Prompt Engineering & Caching
- Persistent Agent Memory & MCP
- AI Prompt Engineering for Research
- Quantitative Finance Research
- Statistical & Mathematical Modeling
- Pre-Registration & Multiple-Testing Control
- Probability & Statistics
- Linear Algebra Foundations
- Backtesting & Performance Metrics
- Sharpe Ratio, Drawdown & Risk Analysis
- Walk-Forward, Block-Bootstrap, Monte-Carlo
- Deflated Sharpe, PBO (CSCV), MinBTL
- Point-in-Time Data & Look-Ahead Discipline
- Python for Finance & AI (numpy, pandas, matplotlib)
- SQL for Finance
- AWS S3 Data Lakes
- Technical Analysis (TradingView, Pine Script)
- Macro & Fundamental Analysis
- AI Tools (ChatGPT, Gemini, Claude)
- Multi-Agent AI Research Architecture
- Research Documentation & Communication

EDUCATION

Financial Management Studies (current) — University of Mindanao (UM) (1st Semester, AY 2026-27 (enrolled))

Engineering Studies (units completed) — University of Southeastern Philippines (USeP) (2022 - 2024)

Philippine Science High School (PSHS) — Philippine Science High School System : Southern Mindanao Campus (Graduated 2022)

Certified Technical Analyst Program — Society of Technical Analysts of the Philippines (STA Tier-1) (Dec 2025)

TECHNICAL TOOLS

- Python (numpy / pandas / matplotlib / pyarrow / boto3)
- SQL
- AWS S3
- Databento (intraday market data)
- Docker (working)
- Microsoft Excel
- Google Sheets
- TradingView + Pine Script
- Notion
- Google Colab / Jupyter
- Git & GitHub
- ChatGPT / Claude / Gemini APIs
- Claude Agent SDK / MCP
- Headless-Chrome Rendering

RELEVANT EXPERIENCE

AI Systems Engineer / Quantitative Researcher (contract) 03/2026 - 06/2026

systematic-strategy desk (NDA-protected; closed past contract 03/2026 - 06/2026) — Remote

- Built a 31-gate statistical evaluation harness (G1-G31) : block-bootstrap CIs, random-timing nulls, walk-forward, 5-era stability, plus a multiple-testing layer (Deflated Sharpe, CSCV-based PBO, MinBTL) : implemented scipy-free in numpy and used to validate both LLM outputs and systematic-trading strategies.

- Designed and operated an 11-agent orchestrator-worker AI research platform (~27,500 words of role-scoped agent charters) with contracted hand-off packets, few-shot routing, and separation-of-duties between generation, validation, and documentation agents : ~76,500 LOC of light-dependency Python supporting it.
- Architected a tiered model-routing policy (Opus = judgment / Sonnet = assembly / Haiku = mechanical / Fable = hardest autonomous) with per-dispatch token budgeting : the cost layer that keeps a multi-agent system (measured at ~15× single-agent token cost) economical to run continuously : plus structured-output contracts gated by a mechanical validator (must exit 0).
- Researched and validated systematic trading strategies across 5 asset classes (equity-index, crypto, energy, metals, agriculture) on the desk's statistical-filter platform; shipped candidates through paper-shadow and live forward out-of-sample testing under pre-registration and frozen-spec evaluation.
- Built point-in-time, look-ahead-disciplined data pipelines from scratch on free public sources; implemented byte-range subsetting, completeness guards, gap logging, and idempotent incremental pulls to produce reproducible research-grade datasets.
- Caught and documented false positives as enforced methodology : banking each into the desk's reusable research-integrity playbook : and designed an automated monthly forward-out-of-sample monitoring fleet (scheduled data pull → S3 sync → frozen-spec evaluation → ledger) that produces un-gameable live performance evidence.

Trading Platform Testing & Execution Research Analyst (contract) 04/2026 - 06/2026

AI-engineering consultancy (closed past contract) — Remote

- Conducted structured testing of trading platform onboarding flows to evaluate execution clarity, workflow logic, and system usability from a trader-first perspective.
- Analyzed user execution pathways to identify breakdown points in order placement, setup processes, and trading workflow comprehension.
- Documented operational friction points and system inefficiencies affecting trading execution accuracy and user decision-making.
- Evaluated trading platform behavior under simulated real-user conditions to assess consistency, reliability, and functional clarity.
- Translated execution observations into structured insights to support product and trading workflow optimization.
- Applied AI prompting tools (ChatGPT, Claude, Gemini) to accelerate literature review and pattern recognition while manually verifying accuracy of all outputs.

Independent AI Systems Engineer & Quantitative Researcher 01/2025 - 05/2026

Personal Investing & Self-Directed Study — Remote

- Designed and shipped multi-agent LLM systems end-to-end: agent charters, eval harnesses, model-routing policy, structured-output contracts, persistent memory, and Python tooling : for content automation, venture incubation, and personal-knowledge workflows.
- Designed and backtested systematic strategies on crypto and equities using Python; evaluated performance via Sharpe ratio, drawdown, win rate, and profit factor.
- Read and summarized 20+ academic and practitioner papers on momentum, mean-reversion, volatility carry, statistical arbitrage, and multi-agent AI architectures into structured one-page research notes.
- Maintained a research journal documenting hypotheses, methodology, statistical tests, and outcomes : building a personal library of structured AI + quant knowledge that fed into a subsequent AI Engineer / Quant Researcher desk engagement.

Crypto Trading Systems & Workflow Research Assistant 10/2025 - 04/2026

Ledger51 Trading Community — Digos City, Philippines

- Supported structured analysis of crypto trading workflows, including order execution systems, trading bots, and platform mechanics.
- Simplified complex trading system behavior into structured, step-by-step execution frameworks for applied user understanding.
- Assisted in identifying workflow inefficiencies and execution gaps affecting trading accuracy and consistency.
- Provided analytical breakdowns of trading platform functions including order types, execution logic, and system interactions.
- Contributed to structured documentation of trading processes for research and training purposes.

Financial Market Educator & AI Integration Specialist (ongoing side) 12/2024 - Ongoing

Independent / Various Universities and Communities — Remote / Davao Region

- Delivered workshops, webinars, and presentations on financial markets, trading systems, AI applications, and emerging technologies.
- Simplified complex financial and macroeconomic concepts into practical insights for students and professionals.
- Conducted market trend analysis involving Forex, stocks, cryptocurrencies, and AI-driven financial systems.
- Utilized AI tools and data-driven research methodologies to improve educational delivery and strategic analysis.
- Served as a guest speaker at universities and professional communities on topics involving financial literacy, trading psychology, AI, and blockchain technologies.

ACADEMIC & PERSONAL PROJECTS

- **Multi-Agent AI Architecture (Field Guide) —** Curriculum authored from first principles (no framework) covering orchestrator-worker topologies, eval-harness design, model-routing policy, structured-output contracts, persistent agent memory, and cost discipline. Adopted as the teaching reference for a research-desk engagement. *(available on request)*
- **Backtesting Sandbox —** Python-based backtesting sandbox that ingests OHLCV data, computes Sharpe / drawdown / win-rate / profit-factor, and outputs markdown research reports. Uses pandas, matplotlib, and SQLite. *(available on request)*

- **AI-Slop Evaluation Gate —** 13-metric literature-grounded evaluator for AI-generated content; deployable Streamlit app, stdlib scoring core. Drove a real draft from HEAVY (index 81) to CLEAN (index 3). *(available on request)*

CERTIFICATIONS

Finance, Trading & Economics:

Certified Technical Analyst Program : Society of Technical Analysts of the Philippines (Tier-1), Certified Technical Analyst : CertifyMe, Financial Trading in Python : DataCamp, Foundations of Growth Equity : Goldman Sachs, JPMorgan Chase Investment Banking Job Simulation : Forage

Mathematics, Statistics & Programming:

Getting Started with Python for Finance : LinkedIn, SQL for Finance Professionals : LinkedIn, Understanding Data Science : DataCamp, Data Literacy : DataCamp

AI, Data Science & Technology:

Introduction to AI Agents : DataCamp, AI Fundamentals : DataCamp, Artificial Intelligence Fundamentals : IBM, Introduction to AI : Google, AI for Business Professionals : HP LIFE

Selected Events, Hackathons & Programs:

Galactic Problem Solver : NASA Space Apps Challenge (Zurich, CH) : Oct 2025, BIDA META AICCELERATE 2025 (5-day intensive) : Meta & Bayan Academy : Dec 2025, UP Data Science Society : Alternative Classroom Learning Experience 2026 : Feb 2026, LimitlessBiz: AIM ASEAN Training Programme : Limitless Lab : Mar 2026, Sui Builders Program Davao : Sui Foundation : Apr 2026, Blockchain4Youth Learning Hub Program : Bitget : Apr 2026, Speedrun Ethereum : ETHPH Mindanao : Aug 2025, Guest Speaker : USeP CBA Annual Business Expo 2026 : Feb 2026