Dr. Stephen Dietrich-Kolokouris: Technical & Strategic Intelligence Brief

1. AI/ML Engineering & RAG Architecture

Stephen has successfully pivoted his 15 years of technical leadership into the Generative AI domain, treating AI as a deterministic engineering problem rather than a black box.

Production RAG Systems: Architected a production-grade Retrieval-Augmented Generation (RAG) pipeline using LangChain and FAISS vector databases to index 15 years of technical documentation.

LLM Prompt Engineering: Expert in designing precise, context-aware prompts for models like GPT and LLaMA, optimizing for accuracy in technical support and automated helpdesk responses.

AI Support Automation: Designed and implemented LLM prompts to automate helpdesk logic, reducing ticket resolution time by 25% while maintaining a 97% satisfaction rating.

Python Integration: Developed Python scripts to integrate AI-driven diagnostics with existing support systems like ServiceNow and Jira, saving approximately 15 manual hours weekly.

2. WarSim: Advanced Data Modeling & Strategic Simulation

The WarSim Algorithm represents Stephen's leadership in high-scale data engineering for the Department of Defense (DoD).

Scale of Simulation: Leads data modeling for a DoD-submitted conflict simulation processing 280,000 nodes and 18,000 entities across 1,100 conflict scenarios.

Big Data Pipelines (ETL): Built Python-based ETL workflows to process 10TB of simulation data, achieving a 95.5% realism score by integrating cyber threat intelligence and geopolitical datasets.

Real-Time Analytics: Designed SQL structures enabling real-time analytics on classified networks (SIPRNet/JWICS), reducing query processing time by 20%.

Network Flow Automation: Engineered PowerShell automation handling 6 million packet data flows per simulation step, improving runtime efficiency by 25%.

3. Classified Networks & Critical Infrastructure (CCIE #2482)
As a CCIE in Routing & Switching, Stephen provides the technical foundation for "Zero-Trust" and "High-Availability" architectures.

Nuclear Facility Security: Architected a Cisco ISE deployment for a 20,000-endpoint nuclear facility (V.C. Summer Station), managing hardware specs and laboratory test environments.

Classified Hardware (CSfC): Deployed CSfC-certified encrypted systems for DoD reconnaissance missions, utilizing FIPS-validated SED and hardened NVMe drives on active military aircraft.

Global Security Consulting: Served as a Cisco Red Badge Engineer in Advanced Services, investigating vulnerabilities in ASA, IPS, and Route/Switch infrastructures for global enterprise clients.

Protocol Mastery: Expert in BGP, VXLAN Layer 2 & 3 Overlay Technology, and IPv4/IPv6, ensuring deterministic system recovery.

4. Forensics & Cyber-Kinetic Incident Response
Through Digital Battleground, Stephen applies forensic rigor to solve high-entropy system failures.

The Magnolia Hotel Case: Diagnosed and mitigated a sophisticated malware attack that crippled a 30-story facility after three prior firms failed; rebuilt the entire network infrastructure from the ground up.

Mobile Device Forensics (MDFTs): Expert user of Magnet Forensics solutions to recover encrypted and deleted data, assisting the Dallas Police Department and District Attorney's office with overwhelmed extraction workflows.

Real-Time Monitoring: Conceived and deployed an advanced real-time crime monitoring system to track criminal activity in the City of Dallas.

5. The PhD Advantage: Information Entropy & C2 Resilience
Stephen's Ph.D. in History from Goethe University provides the analytical framework for his technical work.

Information Entropy (H): Applies historical patterns of conflict and the physics of entropy to model "Strategic Darkness" in global logistics and energy grids.

Interdisciplinary Author: Published three books exploring the lineage of innovation, leadership decision-making under pressure, and the intersection of history and technology.

Renaissance Professional: Moves fluidly between obscure historical research and hands-on, packet-level problem solving, a unique synergy that provides a moral and ethical anchor for technology.