ADOLFO LUGO

Jacksonville, FL (Remote) | **FoundationalIT.net** | **ScaleWithFitos.com** | **UpIsUp.vip** | **TasksForHumanity.com** | GitHub | LinkedIn

PROFESSIONAL SUMMARY

Senior AI Engineer with 10+ years of enterprise IT, Windows and Linux systems administration, and cloud infrastructure experience, specializing over the past 3 years in architecting production Retrieval-Augmented Generation (RAG) pipelines, multi-agent LLM workflows, and high-speed web applications using TypeScript, Node.js, React, Next.js, Python, and AWS CI/CD pipelines. Proven track record partnering with business and product teams to modernize legacy data pipelines, engineer persistent agent memory and structured tool-calling workflows via Model Context Protocol (MCP) over Pinecone and PostgreSQL vector databases, and build automated evaluation harnesses with human-in-the-loop guardrails that eliminate model hallucinations.

TECHNICAL SKILLS

AI, RAG & Agentic Workflows: Multi-Agent Orchestration, Grounded Enterprise RAG, Model Context Protocol (MCP) Connectors, Persistent Agent Memory, Structured Tool/Function Calling, Vector Databases (Pinecone, PostgreSQL/pgvector, Supabase), Hybrid Search (vector + tsvector), Automated Evaluation Harnesses (LLM Evals, LLM-as-a-Judge), Self-Healing Retry Loops, Human-in-the-Loop Guardrails, RouteLLM, OpenAI / Anthropic Claude / Grok APIs

Full-Stack & High-Speed Web Engineering: TypeScript, JavaScript (ES6+), Node.js, Python, React, Next.js (App Router, SSR/ISR), React Native (Expo), HTML5/CSS3, Tailwind CSS, REST, GraphQL & WebSocket APIs, Low-Latency Streaming UIs

Cloud, CI/CD & Data Infrastructure: AWS (EC2, S3, CloudFront, IAM, Systems Manager, WorkSpaces, CloudWatch, CodePipeline, CodeBuild, CodeDeploy), GitHub Actions CI/CD, Vercel Edge, PostgreSQL (Row-Level Security, SECURITY DEFINER RPCs, Triggers), Confluence & Jira APIs, Terraform, Ansible, APScheduler, systemd, PowerShell, Bash

Operating Systems, Containers & Virtualization: Windows Server (2016–2022), Active Directory (AD), Entra ID (Azure AD), Group Policy (GPO), RHEL 5–9, Ubuntu Pro, Amazon Linux, Docker, Linux Namespaces, VMware vSphere/vCenter/ESXi, Horizon

Security, Compliance & Observability: DISA STIG, CIS, NIST 800-171, SOX, PCI, OpenSCAP, Tenable, Nessus, IAM, RBAC, LDAP, PAM, SSSD, CloudWatch, Dynatrace, Grafana, Prometheus, Splunk, ServiceNow, SCCM

PROFESSIONAL EXPERIENCE

Navient **Jan 2024 – Present**
Senior AI Engineer *Remote / Herndon, VA*

- Partnered with business and product teams to modernize enterprise data pipelines, designing automated document ingestion, semantic chunking, vector embedding generation (pgvector 1536-dim), hybrid retrieval (tsvector + vector), and strict source-grounding workflows—deploying secure, IAM- and Row-Level Security (RLS)-governed AI agents on AWS that cut manual operations lookup overhead by 65%.
- Built grounded enterprise RAG pipelines across internal knowledge bases—integrating Confluence runbooks, Jira ticket histories, and SQL/PostgreSQL operational records—and engineered automated Python evaluation harnesses (pytest, LLM-as-a-judge logic guards, and 3-retry self-healing validation loops) that reduced production hallucinations by 88%.
- Engineered full-stack agentic applications using Next.js, React, TypeScript, REST/GraphQL/WebSocket APIs, and AWS cloud infrastructure, implementing persistent short- and long-term agent memory systems, Model Context Protocol (MCP) tool connectors across 20+ APIs, and multi-hop RAG pipelines over Pinecone and PostgreSQL vector databases.
- Built deterministic production LLM workflows in TypeScript, Node.js, and Python utilizing structured tool calling (strict JSON schema validation across Ingestion, Reasoning, and Verifier agents), human-in-the-loop approval gates, and high-speed streaming web interfaces—increasing execution accuracy to 99.1% and dropping P95 response latency from 6.4s to 1.2s.
- Shipped production multi-agent triage applications and migrated 40+ scheduled autonomous agent routines to deterministic Python (APScheduler/systemd) with isolated Linux mount-namespace dry-run harnesses, RouteLLM model routing, daily token budget caps, and JSONL usage ledgers—cutting Tier-2 escalation times by 45% and monthly LLM API spend by 47%.
- Engineered cross-account CI/CD pipelines using GitHub Actions, AWS CodePipeline, CodeBuild, CodeDeploy, and Terraform to standardize automated AI and web deployments across multiple AWS accounts, while migrating a compromised legacy Joomla property to a secure Amazon S3 and CloudFront static/edge architecture (cutting page load latency by 70%).
- Resolved Docker startup, resource limit, bridge networking, port mapping, and logging bottlenecks supporting containerized Python/Node.js AI microservices, while administering 100+ hybrid Windows and RHEL/Ubuntu systems across VMware and AWS (EC2, S3, ALB, IAM, CloudWatch, Systems Manager) and remediating 1,200+ WorkSpaces vulnerabilities.
- Implemented Active Directory, SSSD, and RBAC security controls across hybrid infrastructure and internal AI tooling to enforce SOX, PCI, and NIST 800-171 compliance, authoring operational runbooks and leading 30+ team knowledge-transfer sessions.

Rotech **Mar 2023 – Jan 2024**
Windows & VMware Systems Administrator *Orlando, FL*

- Administered hybrid Windows Server and Linux infrastructure across VMware ESXi 7.0 hosts, maintained VM templates, managed Active Directory Group Policy (GPO), and troubleshot VMware Horizon Cloud Connector issues.
- Created PowerShell and Ansible playbooks for server hardening, user provisioning, BigFix removal, and routine administrative automation, cutting manual ticket handling time by 50%.
- Hardened enterprise servers against DISA STIG and CIS benchmarks and configured automated systemd/service recovery scripts to ensure automatic application recovery after monthly patching cycles.
- Deployed and configured secure SFTP and SMB/Samba file transfer services, tuned system performance, and resolved DNS, DHCP, and network connectivity issues.

Highmark **Sep 2017 – Mar 2023**
Windows & Infrastructure Systems Administrator *Remote / Pittsburgh, PA*

- Created an automated scripting utility (PowerShell/Bash) to update and recover Oracle JDBC connection strings and application configurations, reducing a 40-minute manual process to approximately one minute across multiple applications and environments.
- Managed the full lifecycle of Windows Server and RHEL systems across VMware vSphere/vCenter, bare-metal, and AWS environments, including builds, Active Directory administration, WSUS/SCCM patching, upgrades, backups, and performance tuning.
- Automated server configuration and repetitive administrative operations using PowerShell, Ansible Tower, Bash, Git, and GitHub.
- Configured enterprise networking and directory services including Active Directory accounts, Group Policy (GPO), file system permissions, DNS, LDAP, SSL certificates, firewalls, and SFTP.
- Monitored infrastructure with Dynatrace and vRealize Operations, analyzed logs, and participated in production on-call support and incident response.

Stoltenberg Consulting **Jan 2015 – Sep 2016**
Systems Support Analyst / Tier 2 Help Desk Specialist *Remote / Bethel Park, PA*

- Provided Tier 2 remote support for Windows workstations, shared drives, OneDrive, Citrix, Cisco AnyConnect, VPN access, and Microsoft Office 365.
- Diagnosed hardware, software, identity, and network issues using PowerShell/CMD command-line tools, RDP, SCCM, and remote-support platforms.
- Managed incidents in ServiceNow within strict SLA benchmarks, documented resolutions in the knowledge base, and escalated complex issues to appropriate technical teams.
- Assisted with infrastructure upgrades involving Dell servers, Cisco routers, and switches and supported Active Directory user administration and Azure MFA setup.

SELECTED PRODUCTION PLATFORMS

- **UpIsUp Multi-Agent Operations Platform (upisup.vip):** Architected a 15+ agent real-time analytics engine using Python (APScheduler, systemd), MCP tool connectors across 20+ APIs, automated prediction evaluation harnesses, JSONL cost/usage ledgers, and a low-latency streaming web interface.
- **Tasks for Humanity (tasksforhumanity.com):** Built a Next.js, TypeScript, and Supabase (`pgvector` 1536-dim + `tsvector` hybrid search) distributed research platform secured by 13 PostgreSQL Row-Level Security (RLS) policies, `SECURITY DEFINER` RPCs, SHA-256 verification ledgers, and GraphQL/REST data ingestion (91+ mobile Lighthouse score).
- **Foundational IT & FITOS Cloud (foundationalit.net / scalewithfitos.com):** Deployed a modular Next.js, TypeScript, and Supabase Website-as-a-Service (WaaS) automation engine with Python site-generation pipelines, webhook intake, and automated edge deployments.