Jiajin (David) Wu

AI/LLM Software & Application Engineer

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Summary

AI/LLM software and application engineer with 3+ years building production Python/TypeScript systems for enterprise workflows. At Aptiv, delivered 3 workflow agents and a governed multi-agent platform spanning LangGraph, hybrid retrieval-augmented generation (RAG), human-in-the-loop controls, FastAPI, and a React/Next.js operator console. Technical lead who directed 430+ issues across 9 L1–L3 ADAS programs and earned a 121% top-tier performance rating for two consecutive years.

Technical Skills

AI/LLM Engineering: LangGraph, LangChain, deepagents, Agno, MCP, GitHub Copilot SDK, RAG, tool calling, LLM evaluation, OpenAI, Anthropic Claude, Google Gemini, human-in-the-loop
Languages & Frameworks: Python, TypeScript, React, Next.js, FastAPI, Pydantic, SQLAlchemy, SQL, MATLAB
Data & Retrieval: OpenSearch, BM25, embeddings, kNN/vector search, hybrid search, SQLite, MinIO/S3, semantic memory
Platform & Integration: REST APIs, asyncio/aiohttp, JWT/RBAC/OAuth, Jenkins CI/CD, Docker, Microsoft Graph, Jira, Polarion, Confluence, pytest, Ruff
Systems Engineering: ADAS L1–L3, CAN/CANoe, MBSE, SysML, MagicDraw/MagicGrid, requirements, verification, root-cause analysis

Work Experience

Vehicle System Triage Engineer — Technical Lead, VSDA Triage Team **Feb 2023 — Present**
Aptiv Corporation *Troy, MI*

- Built and deployed 3 Python AI/LLM agents: Release Email Analyzer extracts software versions/change sets and triggers stream-definition builds; VSDA Email Agent converts VSI/VSDA reports into release reports; Jira Ticket Extractor populates the triage database
- Engineered a Jira REST API ticket-automation tool that generated 1,000+ standardized stories team-wide; automated work-history reporting with Jira APIs and Jenkins for near-real-time management visibility
- Led cross-functional issue triage across 9 L1–L3 ADAS programs, personally triaging 267 and directing 430+ system-, vehicle-, and bench-level tickets across Algorithm, Integration, Testing, and Data-Mining teams
- Built reusable Python/MATLAB batch pipelines for large AEB/PEB datasets, calculating camera/module latency and comparing AHBC performance before/after coating changes to deliver customer-ready analysis
- Automated Polarion test-plan generation, test-case import, and result updates; authored 38 integration and radar-signal test cases with end-to-end requirements traceability
- Earned a 121% top-tier performance rating with “Exceeds Expectations” across all goals for two consecutive years; represented the team in customer meetings and company-wide AI working sessions

Graduate Student Instructor — Systems Engineering (ISD 521) **Aug — Dec 2022**
University of Michigan, College of Engineering *Ann Arbor, MI*

- Co-guided 51 students across 13 teams through a four-deliverable MBSE project worth 40% of the course grade, translating stakeholder needs into SysML context, behavior, traceability, architecture, and validation models in MagicDraw/MagicGrid
- Authored a five-slide technology-readiness recitation and an 83-formula Excel decision-tree model comparing 3 investment strategies through expected-payoff and value-of-information analysis

Systems Engineering Intern **Jun — Sept 2022**
Varian Medical System, a Siemens Healthiness Company *Palo Alto, CA*

- Designed a MATLAB GUI application that generated parameterized XML test plans, streamlining execution of radiotherapy-system verification workflows
- Built MATLAB pipelines to acquire, process, and visualize beam data for control-system diagnosis and Beam Generation Monitor subsystem verification
- Collaborated with mechanical, electrical, and software engineers to test a next-generation radiotherapy treatment-system prototype and document results

Additional Work Experience

Mechanical Engineering Co-op **May — Aug 2021**
Contemporary Intelligent Manufacturing Co. Ltd. *Ningde, China*

- Led development and production-line deployment of a portable, non-contact electrode-thickness measurement system meeting a $10,000 maximum-cost requirement and a 0.2-micrometer resolution target

Systems Engineering Intern **Mar — Jun 2020**
Shanghai MAXIEYE Technology Co. Ltd. *Shanghai, China*

- Developed L2 collision-warning requirements and verification plans, then wrote MATLAB tooling to clean and visualize CAN signals for system validation
- Analyzed NHTSA human-factors guidance for L2+/L3 ADAS development and translated findings into system-level engineering inputs

Selected AI/LLM Projects

VSDA Deep Agent — Full-Stack Enterprise AI Platform **Python, LangGraph, FastAPI, OpenSearch**

- Architected 9 deployable LangGraph graphs and 103 tool declarations with hybrid retrieval, isolated code analysis, role controls, and reviewed Jira/Polarion/Confluence writes; backed the platform with 3,167 Python test-function definitions
- Built a React/Next.js console with token/state streaming, approval controls, cost budgets, server-checkpoint recovery, and pending subagent file previews; added bounded, adaptive document-export concurrency

Resume Tailor Harness — Fact-Locked AI Job Pipeline **Python, FastAPI, React, TypeScript**

- Enforced source-grounded resume and cover-letter generation with closed profile schemas, deterministic provenance/skill/numeric gates, hash-verified agent skills, and a reviewer-panel workflow
- Added browser-free job acquisition with verified posting recovery and source cooldowns; unified 4 model providers with guarded transport, tenant-isolated SQLite workspaces, and SSRF-hardened fetching

Requirement Buddy — Reviewed Engineering Workflows **Python, MCP, GitHub Copilot SDK**

- Built an SDK runtime for requirements drafting and independent review with retained artifacts, progress streams, cancellation/resume, and validated Jira/Confluence/Polarion context packets
- Exposed 3 MCP servers with scoped retrieval, explicit write confirmation, and revision checks; enforced workflow contracts with 421 Python test-function definitions

Enterprise Engineering Automation Suite **Python, REST APIs, Jenkins, Jinja2**

- Built typed async Jira, Polarion, Confluence, and Microsoft Graph clients with metadata-aware authoring, concurrent pagination, version checks, and validated page-creation responses
- Aligned SOAP/REST test-result image handling and CI-to-ALM reporting; implemented adaptive bulk scheduling, deferred export-timeout retries, and checkpointed Jenkins report stages

Education

Master of Engineering, Systems Engineering & Design — University of Michigan–Ann Arbor Dec 2022, GPA: 3.9
Bachelor of Science, Mechanical Engineering — Shanghai Jiao Tong University Aug 2021, GPA: 3.6

Publications

M. Liu, F. Zhao, **J. Wu**, W. Fan, J. Zhang, D. Hung, *Hybridizing Unsupervised Clustering Methods for In-cylinder Vortex Motion Analysis Under Different Swirl Ratio Conditions*, SAE WCX, 2021

J. Wu, J. Wang, Y. Yang, Z. Zeng, D. Lu, and L. Lian, *Hybrid Aerial-Aquatic Vehicle for Large Scale High Spatial Resolution Marine Observation*, OCEANS, 2019