# Jacob Campbell
## Backend & AI Engineer

Central Florida | jscampbell21@outlook.com | github.com/SoupyOfficial |
linkedin.com/in/jacob-campbell-94880011b

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## PROFESSIONAL SUMMARY

Backend engineer and internal AI lead who builds the tools that make teams faster, smarter, and more effective. Experienced in owning complex backend systems, designing production-ready automation, and pushing modern engineering practices. De-facto senior backend engineer with expertise in high-difficulty feature work, cross-service architectural ownership, and production-ready automation design. Skilled at bridging the gap between backend engineering, reliability teams, and leadership.

## TECHNICAL SKILLS

**Languages:** Java 21, Python 3.12/3.13, TypeScript, SQL
**Frameworks:** Spring Boot, Grails, Flask, FastAPI
**DevOps & CI/CD:** GitLab CI/CD, Docker, Tomcat, Pipeline Optimization
**AI/ML:** LLM Agents, Multi-tool Pipelines, Tool-based Reasoning, Automated Documentation
**Data & Tools:** ANTLR4 DSLs, Telematics Processing, Schema Design, Observability, Logging Systems

## PROFESSIONAL EXPERIENCE

### Backend & AI Engineer
*Transportation/Logistics Technology Company | Central Florida*

- Led company's internal AI initiative — built multi-step agent workflows that analyze repos, fetch GitLab data, generate documentation, and automate reliability tasks
- Owned critical backend systems and cross-service architectural work, handling major backend redesigns, bug hunts, refactors, and enhancements
- Designed and shipped a custom ANTLR4 domain-specific rule engine enabling non-developers to create diagnostic logic
- Modernized services using Java 21 + Spring Boot upgrades, improved logging and observability with structured logs
- Built stable data preparation workflows for high-volume, inconsistent locomotive sensor data to support reliability engineering
- Improved multi-service GitLab CI/CD flows and built automation scripts that streamlined developer workflows
- Mentored backend engineers, absorbed complex tasks, and acted as bridge between backend, reliability engineers, and leadership
- Guided leadership on real-world AI adoption and long-term strategy; standardized AI-assisted development practices

## KEY PROJECTS & ACHIEVEMENTS

- **Internal AI Automation Platform**: Built modular multi-tool pipelines for reliable automated reasoning, reducing repetitive engineering effort and accelerating research across the organization
- **Custom Diagnostic Rule Engine**: Developed an ANTLR4-based DSL for condition-based diagnostic rules with a configurable evaluation engine in Java 21, reducing engineering bottlenecks
- **Telematics Data Pipeline**: Normalized large telematics datasets, improved schema consistency, and built reusable tools for analyzing thousands of sensor datapoints
- **Backend Platform Modernization**: Led platform upgrades and stabilization, improving maintainability and becoming the de-facto senior backend engineer

## CORE STRENGTHS

Backend Architecture & System Design • AI Workflow Automation & LLM Integration • Data Processing & Reliability Tooling • DevOps Engineering & CI/CD Pipeline Optimization • Cross-Team Leadership & Technical Communication

## EDUCATION

**Bachelor of Science in Computer Science**

Coursework: Data Structures, Algorithms, Software Engineering, Database Systems, Machine Learning