

ISSAC KONDREDDY

Software Engineer | Distributed Systems & Applied AI

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SUMMARY

Software engineer who works across distributed systems and applied ML. At Staples I run the FBS Inbound Orders platform: file ingestion from a bunch of sources and formats, automated AS400 order creation (took processing from about 2 minutes down to under 20 seconds), event-driven receipt pipelines, and Temporal tying it all together. I came in as a contractor; when our lead left I already knew the system end to end, so I picked up the lead responsibilities and now handle design, planning, and a team of four while still writing code. I like figuring out why something is slow or broken before I touch it, and I like owning things start to finish. Before Staples I did ML research at MITACS and published six papers on optimization and classification. MS in CS from the University of Central Missouri. On the side I built StackUp, a study tracker that's live and running, using AI to help me ship it fast.

PROFESSIONAL EXPERIENCE

Software Engineer (Contract), Staples

Jun 2025 – Present

Remote, USA

- Lead architecture and delivery of Fulfillment By Staples (FBS) Inbound Orders, an event-driven platform of 9+ microservices spanning order intake, processing, AS400 fulfillment, and receipts.
- Took over team lead responsibilities after the prior lead departed; own design specs, sprint planning, and mentorship of a 4-member team while remaining hands-on in development.
- Built a multi-source file ingestion pipeline consuming purchase orders from Mailbox, SFTP, and Azure Blob Storage; handles files up to 50,000 lines across JSON, CSV (headered/non-headered), EDI, and Excel with multiple schema versions per format.
- Re-engineered the Spring Boot AS400 integration for automated PO creation, reducing order creation time from ~2 minutes to under 20 seconds (>85% reduction).
- Developed an order receipt pipeline consuming fulfillment events from Azure Event Hubs, persisting to PostgreSQL, and dispatching real-time API notifications and email acknowledgements to partners.
- Migrated all long-running workflows to Temporal, covering ingestion, order creation, receipts, retries, idempotency, and error recovery across the order lifecycle.
- Designed a centralized database service layer standardizing persistence, lookup, and validation; cut duplicated DB code by ~25–30% and improved maintainability.
- Led production debugging and incident resolution using structured logging, workflow introspection, and metrics, reducing manual operational intervention by ~20–25%.
- Owned deployment and release workflows via Helm charts and CI/CD pipelines for consistent, repeatable releases across environments.

Research Intern — Machine Learning, MITACS

Jul 2022 – Oct 2022

Kamloops, BC, Canada

- Developed hybrid machine learning models combining quantum-inspired methods with metaheuristic optimization for medical anomaly detection.
- Implemented supervised ML pipelines in MATLAB, achieving ~95% accuracy on breast cancer classification datasets.
- Benchmarked 20+ optimization algorithms, applying statistical tests (F-test, Z-test) to validate and compare model performance.
- Co-authored research contributions extending the lab's work on optimization-driven feature selection and classification.

PROJECTS

StackUp — AI-Assisted Study Tracker

2024 – Present

devml-frontend.vercel.app (live)

- Designed and shipped a live full-stack PWA for ML/CS self-study using AI-assisted development. Integrated the Claude API with prompt engineering for context-aware quiz generation; features spaced-repetition revisits, a Monaco code editor, streak tracking, and JWT auth.
- **Tech:** Node.js, Express, Supabase, Vercel, Claude API

Quanvolution Neural Network for ECG Arrhythmia Detection

2022

- Developed a hybrid quantum-inspired CNN (Quanvolution) recognizing arrhythmia from 2D scaleogram features of ECG signals; published and cited 25+ times.

- **Tech:** Quantum Neural Networks (QNN), CNN, MATLAB

EDUCATION

M.S. in Computer Science — University of Central Missouri

Aug 2023 – Dec 2024

Lee's Summit, Missouri, USA · GPA 3.6/4.0 · Coursework: Machine Learning, AI, Cloud Computing, Advanced Algorithms

B.Tech in Electronics & Communications — Vel Tech University

Aug 2019 – May 2023

Chennai, India · GPA 9.14/10.0 · Coursework: Deep Learning, Digital Signal Processing · IEEE Signal Processing Society — President

TECHNICAL SKILLS

Languages: Java, Python, SQL, C, R, MATLAB

Backend & Distributed Systems: Spring Boot, REST APIs, JPA/Hibernate, Temporal Workflows, Microservice Architecture

Eventing: Event-Driven Architecture, Asynchronous Processing, Azure Event Hubs, Apache Kafka

Databases: PostgreSQL, MySQL, Relational Data Modeling

Cloud & DevOps: Docker, Kubernetes, Helm, CI/CD, Git, Jenkins, AWS (S3, EC2, Lambda, SageMaker), Azure (Event Hubs, APIM, Key Vaults)

AI / ML: TensorFlow, PyTorch, Scikit-learn, Pandas, NumPy, Deep Learning, LLM API Integration & Prompt Engineering, Model Monitoring & Drift Detection

Testing: JUnit, Mockito, Unit & Integration Testing, API Testing, Logging & Debugging

PUBLICATIONS

- *Quanvolution Neural Network to Recognize Arrhythmia from 2D Scaleogram Features of ECG Signals* — ICITIIT 2022 (**25 citations**)
- *Feature Selection Using Elephant Herding Optimization Hybridized with Grey Wolf Optimization for Anomaly Detection in Wafer Manufacturing* — Springer (Advanced Computational Paradigms), 2021
- *Investigation on Enhancing Binary Classification Accuracy of Supervised Classifiers Using Various Transforms* — IOP Conf. Series: Materials Science & Engineering, 2021
- *A Study on Real-World Implementation and Future Trends of Internet of Things* — IEEE I-SMAC 2020 (6 citations)

CERTIFICATIONS

- **AWS Certified Cloud Practitioner**