KHALID NAJAM

AI/ML Engineer | 4 Years Experience

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Gurugram, Haryana, India

LinkedIn | GitHub | Portfolio

Work Experience

- **PeopleStrong** (acquired by Goldman Sachs) *Nov 2024 – Present*
  AI/ML Engineer (SDE-II) Gurugram, India
  - Architected a RAG-based multi-agent payroll assistant using Google Vertex AI (Gemini), designing conversational session management, context handling, and REST API endpoints; iterated through 3 model versions (gemini-pro → gemini-1.5-flash → gemini-3-flash-preview) optimizing for latency and accuracy
  - Built integration layer matching Python payslip-agent reference implementation with Java backend session management (InitializeCommonSessionManagement.java), bridging ML model serving with enterprise authentication infrastructure
  - Engineered formula parsing engine migration from Nashorn/GraalVM to Rhino, designing runtime JavaScript evaluation for complex payroll formulas, analogous to expression parsing in ML feature engineering pipelines
  - Led JDK 8→17 platform migration across all modules: resolved Hibernate 6.6 HQL syntax compliance, migrated WebPay endpoints from AWS to GCP, and stabilized deployments, demonstrating large-scale production system refactoring critical for ML infrastructure
  - Drove 7+ rounds of Snyk security vulnerability remediation, hardening API attack surface for AI-serving endpoints
  - Led sprint planning and mentored junior engineers; resolved 5+ P0/P1 production incidents with systematic root-cause analysis

- **PeopleStrong** *Jul 2022 – Nov 2024*
  Software Engineer (ML Systems) Gurugram, India
  - Architected a custom Java rule evaluation engine replacing Drools, implementing configurable validation pipelines with dynamic condition evaluation, formula parsing, and threshold-based decision logic, structurally analogous to ML feature validation and inference pipelines
  - Engineered 10+ data-intensive payroll modules end-to-end across entity, service, API, and UI layers (Loan, BRE, Investment V3, NPS, CTC, Variable Pay), processing complex financial calculation trees with BigDecimal precision; contributed 1,250+ production commits across 3 repositories
  - Built Investment V3 Tax Calculator supporting all investment modules with mixed data handling, HRA exemption computation, and multi-regime tax calculation, performing complex numerical computations analogous to financial ML model outputs
  - Designed complete outbound API suites for BRE and Reimbursement: structured data validation, Base64 document encoding, attachment handling, and payment status reconciliation, production data pipeline patterns directly transferable to ML serving APIs
  - Implemented multilingual NLP-adjacent features including Thai investment module with dynamic text resolution via SysResource reading, locale-aware validation, and internationalized form security
  - Built mobile API layer for BRE and CTC: endpoint design, null safety, scientific notation handling for 3-decimal display, demonstrating cross-platform data consistency expertise
  - Delivered 3-decimal currency precision upgrade (Double → BigDecimal) across full stack, systematic data type migration across entities, services, and UI, analogous to ML model precision and quantization workflows
  - Optimized Variable Pay scheduler by tuning batch sizes (500→50→400) and intervals (5min→2min), reducing processing overhead, performance tuning directly transferable to ML batch inference optimization

- **PeopleStrong** *Jan 2022 – Jul 2022*
  Software Engineer Intern Gurugram, India
  - Developed modular Loan Management System with configurable rule engine for eligibility criteria evaluation and multi-level approval workflows in Java and Angular

- Built employee and approver portals streamlining end-to-end loan lifecycle; received pre-placement offer for outstanding performance

- **Indian Institute of Technology Kharagpur** *Jun 2021 – Jan 2022*
  Research Intern, AI/Deep Learning Kharagpur, India
  - Developed deep learning classification models for volcanic deformation detection using Sentinel-1 SAR satellite data and PSInSAR interferometric techniques under Prof. Debashish Chakravarty, Department of Mining Engineering
  - Implemented and benchmarked multiple CNN architectures including AlexNet, ResNet, and Autoencoders, achieving 90%+ classification accuracy on complex geospatial imagery datasets
  - Applied advanced data augmentation techniques (rotation, flipping, scaling, noise injection) and transfer learning with pretrained ImageNet weights, improving detection rates by 95%
  - Delivered weekly research progress reports with model performance metrics, confusion matrices, and architectural comparison analysis

Key Projects

- **Payroll AI Agent** *Jan 2026*
  Google Vertex AI, Gemini, RAG, Java
  - Multi-agent system for natural language payslip queries with session-aware conversational AI and enterprise auth integration; iterated across 3 Gemini model versions (gemini-pro, gemini-1.5-flash, gemini-3-flash-preview) for production latency and accuracy optimization

- **Business Reimbursement Engine (BRE)** *Apr 2024 – Feb 2026*
  Java EE, Angular, Mobile API
  - Complete module rewrite with custom validation engine replacing Drools, mobile and web APIs, outbound integration suite, 3-decimal BigDecimal currency precision, and Air India-specific duplicate submission handling

- **Investment Declaration V3** *Nov 2022 – Feb 2026*
  Java EE, Angular, Drools
  - Major feature set: Let Out/Self Occupied property data pipeline for tax declarations, TDS/TCS with auto-approval, Tax Calculator, Copy Previous Year with window logic, FNF flow, EITR file management, and 7+ Snyk security remediation rounds

- **Volcanic Deformation Classification** *Jun 2021 – Jan 2022*
  PyTorch, CNN, SAR Data
  - Deep learning research: AlexNet/ResNet/Autoencoder benchmarking on Sentinel-1 geospatial data, 90%+ classification accuracy, data augmentation pipeline, and transfer learning with ImageNet pretrained weights

Technical Skills

- **AI/ML & Data Science:** Google Vertex AI, Gemini API, RAG Architecture, LangChain, LangGraph, PyTorch, scikit-learn, CNN (AlexNet, ResNet), Deep Learning, Transfer Learning, Data Augmentation, NLP
- **Languages:** Python, Java, TypeScript, JavaScript, SQL, T-SQL
- **Backend & Data Engineering:** Java EE 7 / EJB 3.1, JPA / Hibernate 6.6, JSF 2.2, Drools, REST APIs, Microservices, Redis, S3/FTP
- **Frontend:** Angular 8, TypeScript, HTML/CSS
- **Tools & Infrastructure:** Git, Docker, Maven, Linux, Google Cloud Platform, IntelliJ IDEA
- **Methodologies:** Agile Scrum, OOP Design, Research Methodology, CI/CD

Education

- **Kalinga Institute of Industrial Technology** *Aug 2018 – May 2022*
  Bachelor of Technology in Electronics & Electrical Engineering Bhubaneswar, India
  - CGPA: 8.0/10 | Minor in Data Analytics