Keerthana Belthur Parthasarathy

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SUMMARY

AI-native Full-Stack Engineer specializing in **LLM integration, RAG pipelines, and production-ready AI systems**. Experienced in building end-to-end applications using React/TypeScript and Python backends with cloud deployment. Strong foundation in data structures, APIs, and vector-based retrieval systems with a shipping-first mindset.

EDUCATION

- **Syracuse University, Syracuse, NY** **Aug 2024 – May 2026**
  M.S. in Computer Science **CGPA: 3.85**
  Relevant Coursework: Applied Algorithms, DBMS, Computer Architecture, Artificial Intelligence, Machine Learning
- **Visvesvaraya Technological University, Bangalore, India** **Aug 2019 – May 2023**
  B.Tech. in Information Science **CGPA: 3.4**
  Relevant Coursework: Data Structures and Algorithms, Web Development, Machine Learning, Cloud Computing, Networking

EXPERIENCE

Ursamin, Inc. **February 2026 – Present**
Software Engineer Intern

- Defined and executed a delivery plan to stand up a **net-new, isolated Azure Production environment**.
- Provisioned cloud infrastructure using **Infrastructure-as-Code (IaC)** to ensure repeatable, consistent deployments.
- Built **CI/CD pipelines** with gated promotion from **QA to Production**, including validation and rollback controls.
- Implemented production basics: **secrets management, monitoring, logging**, and operational runbooks.

Deloitte Toucheé Tohmatsu Limited **July 2023 – August 2024**
Software Engineer – Data/ETL (Supply Chain and Network Operations)

- Built scalable **Python + SQL ETL pipelines** on multi-million-row datasets, improving forecast accuracy by **30%**.
- Automated manual reporting workflows, reducing operational effort by **40%** and enabling near real-time insights.
- Developed executive dashboards using **SQL and Python** for fast ad-hoc analysis and KPI tracking.
- Added structured **logging and alerting**, reducing data pipeline downtime by **25%**.

ABB Pvt Ltd **February 2023 – May 2023**
Software Engineer Intern

- Enhanced the *Energy Manager* platform using **TypeScript, JavaScript, and REST APIs**, reducing latency by **20%**.
- Automated regression testing with **Selenium**, cutting QA cycles by **25%**.
- Built real-time dashboards to visualize system health and performance metrics.
- Improved delivery reliability through **Git-based CI/CD** and structured testing practices.

PROJECTS

Triage+ PRO – AI-Driven Diagnosis Risk Stratification System

- Developed a LightGBM-based machine learning model achieving 93% accuracy for multi-class disease classification using structured symptom data.
- Integrated SHAP explainability pipeline to provide feature-level interpretability and improve trust in model predictions.
- Built end-to-end backend workflows in Python for severity scoring, probability calibration, and triage threshold optimization.
- Designed structured risk classification logic to differentiate self-care, moderate, and emergency cases using calibrated confidence scores.

PDF RAG System – Retrieval-Augmented Question Answering

- Engineered a Dense Passage Retrieval (DPR) system in Python for semantic document retrieval without FAISS dependency.
- Implemented DeBERTa-based extractive QA model to generate accurate answers from long-form PDF documents.
- Designed cosine-similarity ranking pipeline with optimized token segmentation for improved inference performance.
- Structured modular API-style backend architecture for scalable deployment and microservice integration.

ADHD Dyslexia-Friendly Accessibility Platform

- Built full-stack accessibility application using Python backend and React frontend to convert PDFs into cognitively optimized reading views.
- Developed text segmentation pipeline using PyMuPDF for structured paragraph extraction and rendering optimization.
- Implemented performance-efficient backend APIs to support real-time pagination, highlighting, and UI responsiveness.
- Applied accessibility-driven UX engineering principles to reduce cognitive overload and improve readability for users.

SKILLS

Programming Languages: Java, Python, TypeScript, JavaScript
Machine Learning: LightGBM, SHAP, NLP, Feature Engineering, Model Calibration, Statistical Modeling
Generative AI & Retrieval: RAG Pipelines, Dense Passage Retrieval (DPR), DeBERTa, Embeddings, Prompt Engineering
Backend & APIs: REST API Development, FastAPI, Model Serving, Data Validation
Databases & Cloud: PostgreSQL, SQL, Azure, AWS
Tools: Git, CI/CD, Linux, Docker, Agile Development