

# HARSH KASHYAP

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## Skills

**Languages & Backend:** Java (Spring Boot), Python, C/C++, REST API, SQL  
**Web & UI:** HTML, CSS, JavaScript, Oracle JET, KnockoutJS, Streamlit, Swift, SwiftUI, Flutter  
**Cloud & Infra:** AWS (EC2, S3, SES, DynamoDB), Docker, Jenkins, Cloudflare, CI/CD  
**Data & AI:** XGBoost, Keras/TensorFlow, FAISS, RAG, Generative AI (GenAI) applications  
**Tools & Others:** Git/GitHub, Postman, Splunk, Shell Scripting

## Experience

### Full Time

- Apple** | *Software Engineer 2* December 2023 – Present
- Engineered a **Swift desktop application** that replaced terminal-based 5G protocol testing workflows using **Swift, OpenAPI, C++, Python, and shell scripting**, resulting in an **80% migration from terminal to GUI** and substantial gains in developer productivity.
  - Built an in-house **XML Editor in SwiftUI** to substitute third-party Radisys and OSS ASN.1 tools, enabling full internal testing capabilities and contributing to **projected savings of \$100 per Modem Functional test**.
  - Implemented a dynamic **pre-validation framework for LTE/NR message creation** that automatically handled interdependent component checks, reducing **debug time from 20 minutes to under 2**.
  - Architected and launched a **full-stack PIT triage automation pipeline** using **LLM agents, Docker, Jenkins APIs, log embeddings, and self-learning error classifiers**; integrated **S3 caching, retry logic, tar compression, and Slackbot delivery** to automate CI-triggered triage for **1,050+ tickets** across **60+ engineers**.
  - Executed the end-to-end bring-up of Apple's **cellular lab in India** using **USRP X410/B210, base stations, modems, and UEs**, enabling **HDR (High Data Rate)** validation and functional testing.
  - Supervised and guided **2 interns** in developing an **AI-powered Workspace Optimizer** leveraging **RAG, contextual embeddings, and Pinecone Vector DB** for one-click provisioning and iterative remediation, reducing manual effort by **73%**.
- PayPal** | *Software Engineer* July 2023 – October 2023
- Improved the Global Merchant Lending admin tool, driving **13% audit efficiency gain** by automating manual workflows using **React, Node.js**, and internal PayPal frameworks; ensured **CECL** compliance.

### Internships

- Apple** | *Software Developer Engineering Intern* January 2023 – June 2023
- Created an internal single-page application (SPA) **utilizing OracleJet, HTML, CSS, Knockout.js, Spring Boot, Aluminum, Splunk, and other internal frameworks**, leading to an **impressive 83% reduction in support turnaround times** through the optimization of cross-domain access and reduction in complexity.
  - Designed and deployed an ML pipeline (**XGBoost + feature engineering**) to predict SLA resolution times with **80%+ accuracy**, reducing SLA breaches by **25%** across IS&T and ticket incidents.
- Tata 1mg** | *Engineering Intern* October 2022 – November 2022
- Utilized **Asyncio, Celery, and RabbitMQ** to orchestrate asynchronous task scheduling, delivering **operational efficiencies for 3,000 employees** in mail scheduling and projecting potential benefits for **over 4 million customers**.
- Cisco** | *Technical Undergraduate Intern* June 2022 – July 2022
- Conducted SDWAN network data analysis, created an internal dashboard displaying Quality of Service metrics, and achieved a **23.2% efficiency improvement using Data Science, Python, and networking tools**.
- Licious** | *Software Developer Intern* January 2022 – May 2022
- Successfully migrated sections of the application from **Swift to Flutter**, involving extensive **refactoring of over 5,000 lines of code** and resulting in an **estimated 30% reduction in man-hours** and **improved app stability**.
- YASH Technologies** | *Software Engineering Intern* July 2021 – September 2021
- Collaborated on the development of an Employee Management System portal using **SpringBoot**, successfully integrating a database for attendance tracking of **over 6,000 employees**, resulting in significant cost savings.

### Research

- Professor Dennis Shasha** | *New York University*
- Developed **CustomNerd**, a modular framework at **New York University (NYU)** for building domain-specific expertise systems using shared core components; deployed instances including **DietNerd** (PubMed), **WirelessNerd** (3GPP), **InvestorNerd** (Yahoo Finance), and **NerdMama**, incorporating domain-specific data sources, reliability assessment, and safe LLM design on **AWS EC2/S3** with **Cloudflare, AWS Load Balancer**, and OTP-based login via **DynamoDB** and **SES**.
- Professor Parteek Kumar** | *Washington State University*
- Worked on **Agentic Job Matching**, prototyping a dual-agent matching system on **AWS** that used JSON-based negotiation via **EventBridge**, semantic search in **Amazon OpenSearch**, and embeddings with fairness analysis in **SageMaker Clarify**.

### Education

B.E., Computer Science	2019 – 2023	Thapar Institute of Engineering and Technology	9.71 CGPA
Class XII (ISC)	2019	Mount Assisi School	96.25%
Class X (ICSE)	2017	Mount Assisi School	94.33%

### Achievements

- Awarded the **TIET Merit Scholarship** for ranking in the **top 0.5% all four years** of academic studies.
- Ranked **89th out of 100,000** students in the IICC by AICTE coding competition.
- Featured in Apple's Innovation Deck for an idea on Apple Pay, selected out of 350+ submissions.