

Abhinav Kumar

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SUMMARY

Senior Software Engineer with 9 years of experience building scalable distributed systems. Led cross-functional teams of 5-8 engineers, driving initiatives from 0→1. Specialized in system design, ML-powered search systems, and LLM integration. Proven ability to rapidly adopt new technologies.

EXPERIENCE

- **Amazon AGI** Sunnyvale, CA, USA
Senior Software Developer Nov. 2020 - Present
 - **Video Search:** Led design and development of Video search service from POC to launch for Alexa Plus and LLM-powered clients, including system design reviews, team hiring/training, timeline management, stakeholder communication, and technical debt reduction.
 - **Image Search:** Integrated Amazon Knowledge Graph into image search service to improve our systems recall and precision on entity based search queries.
 - **Web Search:** Worked on launch of multiple large language based ranker models to improve precision of web search service. Lead the effort to increase our experimentation velocity by standardizing the model deployment process.
 - * Managed an Intern who helped in building a new tracing tool for debugging and analyzing user queries.
 - **Local Search Experience:** Lead the design and development of the first revenue generating conversational Alexa Skill. It allowed users to book restaurant reservations using natural language.
 - * Migrated our service to use Alexa's new Presentation Framework called APL. This contributed to the success of all the Team goals for that year.
 - * Mentored 3 new SDEs to help with time critical project delivery.
- **PayPal** San Jose, CA, USA
Senior Software Engineer Aug. 2019 - Nov. 2020
 - **Credit Risk Solutions for PayPal Working Capital:** Developed a new microservice using Spring Boot, to interface with new Credit Risk Machine Learning models.
 - **Mentored** an SDE Intern to guide the development of a functional testing framework and reduce the effort required for adding new tests.
- **MoEngage** Bengaluru, KA, IN
Senior Software Developer Mar. 2016 - Jun. 2017
 - **Mobile push notifications:** Refactored the existing code base to improve extensibility and maintainability. Developed an automated fault recovery system, making our service more reliable.
 - * Developed a "Dynamic Product Messaging" system for the product offering "Sherpa".
- **Oracle** Hyderabad, TN, IN
Applications Engineer Jun. 2014 - Jul. 2015

PROJECTS

- **Real-time processing and visualization for smart infrastructure data:**
<https://doi.org/10.1016/j.autcon.2023.104998>
- **Global Event and Trend Archiving (GETAR):** Indexed over 1.5 billion tweets and 1 million web pages into Solr for efficient search and retrieval.

PROGRAMMING SKILLS

- **Languages:** Java, Python, Javascript, HTML, SQL **Technologies :** AWS (Lambda, ECS, S3, DynamoDB, SageMaker), Vector Search (FAISS, OpenSearch k-NN), Docker, PyTorch, React, Kafka, REST, Android

EDUCATION

Virginia Tech — M.S. in Computer Science

Aug. 2017 – Jun. 2019

BITS Pilani, India — B.E. in Information Systems

Aug. 2010 – Jul. 2014