

Abhinav Jain

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EXPERIENCE

- **Bloomberg** London, United Kingdom
Senior Software Engineer *Jun 2021 - Present*
 - **Document Search Platform:** Engineered a comprehensive overhaul of the document search platform (**50K+** power users) for the Bloomberg Terminal, enabling seamless search across diverse data sources like transcripts, paid research & company filings, by leveraging a **React** based UI framework and a **Python/C++** microservice-based architecture
 - **Query Expansion & Search Orchestration:** Architected and implemented core components of a query expansion service, leveraging a structured representation called **QueryState**. Built a search orchestration service for integrating different microservices and allowing serial and concurrent workflows, centralized logging and state management.
 - **Server Side Rendering (AppX):** Supporting development of a framework to render UI components dynamically in a layout using an application driver (for state transitions) and a component registry leveraging a **pub-sub** model.
 - **Dense Vector Search:** Led an initiative to enhance the search pipeline, implementing dense retrieval capabilities leveraging BERT encoders for document and query representation. Orchestrated indexing using an internal **Python** wrapper over **Solr 9** and and seamlessly integrated with internal and external **LLMs** for client demos
 - **Research Data Model:** Created a data ontology mapping different entities such as document sources and filters in our search system. Built a reusable **Python** library on top as an abstraction & canonical reference for all services
 - **Query Analysis Dashboard:** Created a data pipeline and analytics infrastructure utilizing **Cassandra**, **Spark** cluster, and **PostgreSQL** database for data warehousing. Leveraged **Apache Superset** for dynamic charting and visualization, enabling tracking of key metrics like query popularity and search engagement over time.
 - **Synonym Management Tool:** Developed an internal tool to manage and ingest synonyms from a variety of producers. Allowed users to suggest and approve / reject synonyms (with necessary authorization in place). Added a suite of quality checks as part of the filtering process. Reduced deployment time from **1 week** to an **instant**.
 - **Leadership & Oncall:** Backup team lead. Grew the team from **4** to **10**. Mentored **two full time hires** as well as an **intern**. Resolved critical client bugs as part of the weekly triage rota & automated our previously manual processes
- **Flipkart** Bangalore, India
Software Engineer *Jul 2018 - Apr 2021*
 - **Question Auto Answering:** Designed and developed a feature to automatically answer product related questions using product attributes, reviews & answers on an e-commerce site, by fusing a BERT QA model with **Elasticsearch**
 - **Video-based engagement platform:** Built a short-form video sharing platform to run a mobile app-based reality show as a way to boost user engagement (**2.2M** unique visits) during the course of the pandemic. Developed an end-to-end pipeline, from processing to serving these auditions. Used **MongoDB** as primary store & **HBase** as cache
 - **User Insights:** Conceptualised & built a platform for mining insights from user-generated content. Built an internal app for accessing the data using a web interface. Developed custom rules and aggregations to be run through the UI.
- **American Express** Bangalore, India
Data Scientist *Summer 2017*
 - **Fraud Detection:** Researched online ensemble learning methods to detect fraudulent credit card transactions

EDUCATION

- **Indian Institute of Technology Kharagpur** Kharagpur, India
B.S + M.S in Mathematics and Computing; GPA: 3.66/4 *July 2013 - Apr. 2018*

PROGRAMMING SKILLS

Languages: Python, C++, Java, TypeScript, SQL **Technologies:** React, Elasticsearch, Linux, Cassandra
Frameworks: MyPy, Docker, Kubernetes, PyTorch, TensorFlow, Pandas, NumPy, Spark, sklearn, Flask, Pytest

PROJECTS

- **Portfolio Analyzer:** Developed a dashboard to aggregate data across different trading platforms and analyze portfolio
- **Automated Trading Strategies:** Developed a Python application over a broker API with a generic interface to automatically execute as well as backtest different trading strategies for equities, cryptocurrencies and index derivatives