


AYUSH AGARWAL

MACHINE LEARNING ENGINEER

CONTACT

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EDUCATION



Carnegie Mellon University (CMU)

Master of Computational Data Science

2015 - 2016



Indian Institute of Technology (IIT) Madras

B.Tech in Computer Science & Engineering

2011 - 2015

SKILLS

Agentic AI

Deep Learning

Natural Language Processing

Retrieval Augmented Generation

PyTorch

A/B Experimentation

Cross-functional collaboration

PROJECTS

 [AYUSH2991.STREAMLIT.APP](#)

Grounding LLMs with Web Search

Link sentences in LLM response back to source documents in vector database

Agentic RAG

LLM agent reasons whether or not to use RAG to answer user's queries, and rewrites queries for better retrieval performance.

WORK EXPERIENCE

Software Engineer

FEB 2022 - Present

 **GOOGLE (SEARCH)**

- Led collaboration between the Knowledge Graph and Featured Snippets teams, scaling integration by **5x** and improving the **accuracy, trustworthiness, and UX** of Search results.
 - Expanded corroborated answers to **100+ countries** in **20+ languages**.
 - Resulted in **faster user satisfaction** via verifiable top-of-page answers.
- Skills:** C++, A/B Experimentation, Planning, Cross-team Collaboration

- Led expansion of supported platforms for user-generated content on the Search Results Page (SRP), a massively collaborative effort across indexing, retrieval and ranking teams.
 - Added value for content creators by supporting new platforms
 - Improved fairness by enabling more platforms to surface on SRP
- Skills:** C++, A/B Experimentation, Planning, Cross-team Collaboration

Machine Learning Engineer

MAR 2019 - FEB 2022

 **GOOGLE (CLOUD)**

- Built end-to-end ML pipelines for **Smart Compose** in Google Docs, an assistive AI feature which helps reduce tedious typing by autocompleting users' sentences. Launched to 4 new locales.
 - Everyday, millions of characters are typed using Smart Compose.
- Skills:** MapReduce, LSTMs, Java, ML Modeling & Evaluation, Microservices
- Led ML Fairness efforts, integrating a **toxicity classifier** to ensure safe AI suggestions.
 - Hosted Red Team events to uncover model vulnerabilities.
- Skills:** ML Fairness & Toxicity, Python, Collaboration
- Improved hyperlink recommendation in Google Docs by refining model training and data pipelines.
 - Resulted in **measurable CTR improvements**.
- Skills:** Dual Encoder Models, Error Analysis, Recommender Systems

Data Scientist

FEB 2017 - MAR 2019

 **MICROSOFT**

- Built near real-time pipelines for **trend detection** and **news-based answer extraction**.
- Skills:** Python, SQL, Big Data, NLP, Anomaly Detection, C#

Research Fellow

MAY 2016 - AUG 2016



CARNEGIE MELLON UNIVERSITY

- Developed a Q&A system integrating document ranking with ML-based answer extraction.
- Skills:** Apache Lucene, Python, TensorFlow, Web Scraping