

JAYAPRAKASH SUNDARARAJ

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Mountain View, CA

Hands-on software engineer at Google specializing in NLP, Machine Learning, and Large-Scale Information Retrieval. Built chat and voice agents for **100k+ lead-gen advertisers** using Gemini, Cloud, and GTP. Designed retrieval infrastructure for serving answer embedding models with **300M+ document indexes** and **200M DAU**. Skilled in C++, Python, Agents Harness + Evals, LLM-as-a-Judge, PyTorch, TensorFlow, MapReduce, BigTable, Query understanding and Web-Search ranking and retrieval.

EXPERIENCE

MEMBER OF TECHNICAL STAFF GOOGLE INC

OCT 2014 – PRESENT

- [Ongoing] Building chat and voice agent for 100K+ 3P advertisers to improve lead nurturing and qualification with custom tools using Gemini, Cloud ADK, Vertex AI (Search grounding), and GTP.
- Built Search Home page recommendation for Play Store - generated high-quality recommendable queries using Google PaLM 340B model with safety evaluation.
- Redesigned Play Store suggest (autocomplete) indexing and serving: **200M+ query indices**, 20ms p99 latency, personalization model with user signals at **80K QPS (6B+ queries/day)**.
- Founding engineer of Android System Intelligence team. Led design and implementation of Universal Search - a new search surface in Pixel Launcher enabling on-device search across installed apps, contacts, settings, screenshots, and files. Designed ranking and indexing architecture balancing low latency, relevance, and privacy. Led the next app-predictions feature using DNN inference on-device. These launches rolled out to **8M+ pixel devices**.
- Built Deep Neural retrieval system with **300M+ question embeddings, serving 10% of web-search** with low latency; powers “People also ask” feature enhancing user engagement.
- Built Fact checking feature in Google Search including modifying indexing and ranking - fact-checking news articles to combat misinformation, resulting in 50k+ fact-checked articles with **4+ billion annual impressions**.
- Launched several query understanding improvements (synonyms, salient-terms) in web-search ranking with significant IS@5 (Information-Satisfaction) gains.

ACADEMIC RESEARCHER YAHOO! RESEARCH LAB

MAY 2013 – JULY 2013

- Keyword extraction from images using unsupervised ML; progressed to IIT Bombay collaboration with research grant support.

EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

2012 – 2014

- M.Tech (Computer Science) with focus on Machine Learning, NLP, and Information Retrieval
- Advisor: [Dr. Pushpak Bhattacharyya](#)

PUBLICATIONS

- J Sundararaj, A Vyas, B Gonzalez-Maldonado, "[Automated LaTeX Code Generation from Handwritten Math Expressions Using Vision Transformer](#)", arXiv preprint, 2024
- J Kumar, K Jayakumar, J Sundararaj, "[ESMCrystal: Enhancing Protein Crystallization Prediction Through Protein Embeddings](#)", Proceedings of the Conference on Computational Intelligence Methods for Bioinformatics and Biostatistics, 2024
- J Sundararaj, J Jayanth, P Bhattacharyya, "Opinion Summarization using Submodular Functions: Subjectivity vs Relevance trade-off", 16th International Conference on Intelligent Text Processing and Computational Linguistics, 2015. **Won Best Verifiability, Reproducibility, and Working Description award**
- J Jayanth, J Sundararaj, P Bhattacharyya, "[Monotone submodularity in opinion summaries](#)", Proceedings of the Conference on Empirical Methods in Natural Language Processing, 2015

AWARDS

- Received **20+ Google awards** (Peer and Spot bonus) for critical product launches and sharing expertise with team.
- Won **20+ algorithmic competitive programming contests** at national level.
- Awarded Search Professional of the Year by BCS Information Retrieval Specialist Group.
- Program and Review Committee member for ACL ARR, EMNLP; Journal reviewer for IEEE TNNLS, Expert Systems with Applications.
- Hired 100+ and mentored 10+ engineers at Google.

REFERENCES

- [Praveen Jagadishprasad](#), Senior Staff Manager Google DeepMind
- [Dr. Lakshmi Chakrapani](#), Director Google Play Store AI

SELECTED PROJECTS IN THE NEWS

- [Google Play Store unveils a new Search tab in bottom bar](#)
- [Your Android Phone May Soon Predict Your Habits to Suggest Helpful Apps](#)
- [Pixel Launcher search showing results from Google Photos, Files, Contacts, and Settings](#)
- [Finding fresh, helpful information through featured snippets](#)
- [Fact-check now available on Google Search](#)

SKILLS

- **Languages:** C++, Python (Google Readability Reviewer)
- **Agents:** Chat/Voice Agents, Search Grounding, LLM-as-a-Judge, Human Evaluation
- **ML/Infrastructure:** Web Search Ranking, Query Understanding, Neural Deep Retrieval, Recommendation Systems, Search Retrieval Systems, MapReduce, BigTable, PyTorch, TensorFlow

HOBBIES

- Developing Personal AI agents and automation tools (Hermes Agent, Personal Knowledge Management, etc)
- Long-distance cycling enthusiast (completed 500km+ bike to Los Angeles)