JASKARAN KAUR

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EDUCATION

Virginia Institute of Engineering and Technology, Blacksburg, USA
Master of Science in Computer Science **(3.85/4) Expected May 2023**
Thapar University, Patiala, India
Bachelor of Technology in Computer Engineering **(8.71/10) June 2014 - May 2018**

WORK EXPERIENCE

Western Digital Corporation **July 2018 - Aug 2021**

Software Development Engineer – Corporate Search Engine

Worked in the Internal search engine team which owned the indexing, retrieval, and ranking of all the corporate resources to serve the search needs of the company (~65k employees worldwide)

- **Low Lag document indexer**
  Built indexing optimizations including tiered repository(instant repo, fresh repo, stale repo, landmine repo)
  The freshness score of results increased by 239%.
  The discoverability factor went up 1.6x
- **Topicality retrieval engine**
  Led the development of topicality of terms-based retrieval engine to fetch the most topical documents matching the search query. Replaced the old slow-moving bag of the words-based indexes.
  Relevance score increased by > 452%.
- **Query Understanding**
  Designed and implemented Query understanding improvements including bigrams, stop words elimination, and composites. Query performance improved by 75% @ top 5 results. Compute reduced by 20% due to reduced retries
- **Ranking**
  Developed a Lightweight Scoring Module to fast Rank the docs saving ~37% compute cores

Software Development Summer Intern, Qualcomm **May 2022 - August 2022**

- Developed a test and debugging system from scratch with a robust logging mechanism annotated with detailed debug markers to understand the failed test cases, and rich runtime telemetry to evaluate the performance
- Designed the framework to support pre-submit tests along with post-submit periodic health check tests.

Software Development Intern - IP Modeling Team **January 2018-June 2018**

- Remodeled the Memory Sequence Analyzer that analyzed Gigabytes of data making it work with all the new generation IP models, reducing the code length by 57%, and increasing the parsing speed by 7.2X
- 7+ teams with 500+ employees use the parser that enhanced productivity, the reported JIRAs were reduced by 33%

PROJECTS

Sarcasm Detection **Jan 2017- Feb 2017**

Collected the training data from Twitter. Used unigrams and bigrams for feature dictionaries. Used sentiment analysis to draw out extreme or contrasting sentiments to detect sarcasm. Used Python libraries like Gensim, TextBlob, and Ski-kit learn for topic extraction, sentiment analysis, and supervised Machine Learning algorithms.

Spatial Data Structures - Skip List **Aug 2021- Sept 2021**

- Programmed a spatial and probabilistic data structure 'Skip List' in Java that improves insertion, deletion, and search queries with time efficiency of theta(log n).

S.A.R.V.I.S. (Secure and Automated Residential Virtual Intelligence System) **Aug 2016 – Dec 2016**

- Designed an Alexa voice-based economical and secure Artificial Intelligent Smart home system that is 50% cheaper than existing products and doesn't require expensive devices like smart bulbs
- Developed customized skills to control essential appliances, and motion detector sensors for intruder detection with 95% efficiency and robust authentication algorithms to secure the user's camera feed

TECHNICAL SKILLS

- Programming Languages: C, C++, Python, regEx, Javascript, Data Structures, Information Retrieval, FPGA, and Algorithms
- Software & Libraries: Visual Studio, Eclipse, Docker, AWS Firecracker, Kubernetes, TensorFlow, OpenCV
- Databases and Others: Git, Jira, BitBucket, RISC V, SQL, No SQL, Distributed Cache