Hemant Kumar Singh

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SUMMARY

Computer Science graduate(first year) student with full-time professional experience in full-stack software development, multi-tenant cloud application, and test-driven development seeking internship opportunity for summer 2020.

Education

Arizona State University, Tempe, Arizona Aug 2019 — Present
Master of Computer Science(Big Data Systems)
Courses: Distributed Database Systems, Data Mining, Multimedia and Web Databases

SASTRA University, Thanjavur, India June 2009 — May 2013
B.Tech. Computer Science & Engineering(Equivalent to BS in CS) GPA: 8.83/10.00
Courses: Data Structures, Algorithms, Data Warehousing and Data Mining, Artificial Intelligence, Distributed Systems, Database Management Systems

Technical Skills

Programming Languages	: Java, Python, Swift
Databases & Information Retrieval	: PostgreSQL, MySQL, Lucene, Elasticsearch
Software Development Tools	: IntelliJ, PyCharm, Android Studio, XCode
Others Tools & Frameworks	: Git, Redis, Protobuf, JavaCC, TDD

Professional Experience

Member Technical Staff (Software Developer) June 2013 — July 2019
Zoho Corporation Chennai, India

Worked as a full-stack developer in the Search Team for 5+ years. During my stint at Zoho, I had actively contributed to different projects by wearing multiple hats(team tech lead, back end developer, API design and developer, mentor). Some of the key contributions include -

- **Implemented RESTful Federated Search Web Service -** Implemented federated search web service for Zoho enterprise applications and implemented RESTful API endpoints for easier integration. Also, was actively involved with the federated search interface implementation.
- **Improved Findability using Information Extraction -** Incorporated different information extraction techniques to improve the findability of search results. It significantly helped the user find search results using Multi-format date search, IP range search, document author, and other metadata search.
- **Implemented domain-specific search query language -** Implemented query language using JavaCC for IT Help Desk domain. This greatly reduced user efforts to search and apply different filters to achieve the same search goal. The user could simply use queries like - "tickets assigned to me which are due today", "my high priority tickets", etc. to search tickets/requests.
- **Implemented Android and iOS framework for Search Interface -** Lead the design/architecture and development of Android & iOS framework to provide a uniform mobile search user experience in different Zoho mobile apps. Developed components to collect different user interaction signals which can be used in the server end to improve the search relevance and also to provide more insights for the app feature usage. Also, in this project, I had the opportunities to recruit and train new hires for the team.
- **Improved search and indexing performance -** Incorporated techniques like object caching, connection pooling, index request queuing, index warming, etc. to improve performance in different code flow. Some of these techniques helped us significantly with the performance improvement of the search system.
- **Implemented configuration based relational database crawler -** Implemented configuration(XML) based generic crawler for MySQL, PostgreSQL, and MSSQL databases. Also implemented finer level control on the indexing process with simple configuration parameters(data type, tokenization, file parsing, etc.)

Project Trainee (Software Developer Intern) December 2012 — April 2013
Zoho Corporation Chennai, India

- Worked on my final(8th) semester academic project titled *"Search Implementation For Structured Data"* under the co-op program at Zoho Corporation, Chennai, India

Academic Projects

Search implementation for Structured Data SASTRA University, Thanjavur & Zoho Corp., Chennai, India

– I majorly worked on crawling and indexing module of the project. We took a different approach to index, instead of denormalizing tables to create one concrete Lucene document, we indexed each table row as a separate Lucene document and ensuring that table schema is maintained in the inverted index as well. This significantly reduced unwanted index updates and also reduced load on our DB instances, as there was no need of unwanted JOIN queries to recreate the Lucene document for reindexing.

Extracurricular Activities & Achievements

- Secured 1st place in a Computer Network Programming contest - NETWERKZ, during the intra-department annual tech fest PROTOCOL-12 which was held on 21st-22nd January 2012.
- **Dean's Merit List** - Selected for SASTRA University Dean's merit list and awarded merit scholarship twice for being among the top 10% throughout the university in the academic year 2011-12, and 2012-13.