DEBRAJ RAY

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Skills

- JAVA
- C++
- Python
- Android
- GoLang
- Machine Learning
- JDBC and ODBC
- SQL
- Data structures
- Algorithms
- Operating System – UNIX
- Git and Perforce
- Gatling
- Classification: Regression, SVM, decision trees, Multi-Layer Perceptron, etc.
- Clustering: K-Means, Hierarchical, etc.
- Deep neural networks: Convolution Neural Networks, Recurrent Neural Networks (LSTM, GRU)
- ML libraries: scykit-learn, numpy, matplotlib, seaborn, Keras, Tensorflow
- SQL Query engine: Apache Drill
- Cloud computing: Apache STORM
- Distributed Streaming: Apache KAFKA
- Microservices
- Spring-Boot
- Dynatrace and Splunk
- Jenkins and Docker
- Azure SQL Server
- GraphQL
- Innovator
- Quick Learner
- Tech Savvy
- Passionate about coding
- Excellent communication skills
- Team management and leadership
- Team Player
- End-to-end responsibilities from collecting requirements and implementation to delivery of released software to the client.

Work Experience

Software Developer - III 01/2020 to 07/2021
Walmart Global Tech
Team – Global Integrated Fulfilment (GIF)
https://www.walmartlabs.com/

JAVA, Spring-Boot, GoLang, REST Api

- Developed multiple end-to-end REST-apis for different microservices catering to different use cases. These microservices include reporting, order summary, one-stop-dashboard, MyStore app, etc.
- Provided 24 hours support on a weekly rotational basis for production issues such as unexpected behaviour in functionality or infrastructure problems like high CPU utilization or response time degradation. We use Splunk and Dynatrace for monitoring logs and cloud resources.
- Best coding practices with a rigorous test-driven development approach is followed at Walmart. Moreover, all new APIs are performance tested using Gatling and a dedicated QA environment.

- Furthermore, I have done multiple releases single-handedly. Responsibilities include tracking all changes going into that release, getting sign-off from QA, branching strategies and collaboration with other teams to understand if all dependencies are satisfied, deployment of infrastructure changes (like DB and KAFKA), code changes and configs on the release date, validation and live debugging if any issue is encountered.

Software Developer
Magnitude Software
Team – Connectivity (previously, Simba Technologies)
https://magnitude.com/connectivity/
https://www.simba.com/
(Customers of the DRILL driver: MapR, Dremio, Qlik, Microsoft, RStudio, etc.)

02/2018 to 01/2020
(nearly 2 years)

Apache Drill, JDBC, ODBC

(Platform – JAVA, C++)

- I was responsible for the development and maintenance of the Drill ODBC (C++) and JDBC (JAVA) drivers. This includes, feature implementations, bug fixes and upgradation of the drivers.
- I also worked on the Apache Drill C++ client (open source) which the Drill ODBC driver uses. I have often contributed my changes to the open source.
- I drove the efforts to automate the release testing process of the Drill ODBC and the Drill JDBC drivers (mentoring role).
- Oversee the release process of the drivers and drive sprint planning meetings in JIRA.

Software Developer
Motorola Mobility
Team – Moto Voice (Voice Assistant in Motorola Phones)
https://www.motorola.com/us/home

01/2015 to 02/2018
(about 3 years)

Moto Voice
(Android, JAVA)

- I worked as a software developer of the Moto Voice application, which is a virtual voice assistant in Motorola phones. During this time, I was mainly responsible for the ASR (automatic speech recognition) module.
- I had fixed various issues in the app. For example, I fixed many stability issues like ANRs, app crashes, and tombstones, which required a good understanding of the multi-threaded architecture of Moto Voice.
- We revamped the architecture of Moto Voice 2016 and built Moto Voice 2017. The new design loosely packed components that would work independently and in parallel on streaming audio. Furthermore, any Motorola signature application will be able to seamlessly connect to Moto Voice to enable speech recognition, voice authentication, action recognition, etc.
- In the Lenovo Global Hackathon 2016, we conceptualized the integration of Moto Voice into Moto Display (the ambient display on Motorola phones). The prototype won the first prize in the hackathon and is now in production.
- I played a key role in the integration of Amazon's Alexa voice in Motorola phones. I have contributed to the development of the Moto Alexa architecture including the development of a speech authenticator module for reducing false voice triggers and blocking imposters.

Open Source Contribution

My Git Repository - https://github.com/debraj92

- I have contributed fixes for critical crashes in the Apache Drill client (C++). Apache Drill source: https://github.com/apache/drill/tree/master/contrib/native/client

Education

Master's Computer Science (thesis-based) Aug 2021 - present
University of Alberta – Edmonton, Canada

- GPA – 4.0 / 4.0
- **Thesis: Strategic navigation with Reinforcement Learning for intelligent pathfinding in games**
  https://github.com/debraj92/PATH_FINDING_RTS_WITH_RL

PG Diploma on *Machine Learning and AI* June 2018 - June 2019
International Institute of Information Technology – Bangalore

- GPA - 3.9 / 4
- Case studies: https://github.com/debraj92/IIITB_ML

Bachelor of Engineering: Computer Science
PES Institute of Technology (VTU) – Bangalore 2011 - 2015

- Graduated with 8.96 CGPA

Publications

- "**Sentiment analysis of mixed language employing Hindi-English code switching**" (***15 CITATIONS***), accepted in The International Conference on Machine Learning and Cybernetics (ICMLC) 2015, published in IEEEXplore digital library
  URL: https://ieeexplore.ieee.org/document/7340934

- **"Pipelining Acoustic Model Training for Speech Recognition Using Storm" (*1 CITATION*),** published in the IEEEXplore digital library
  URL: https://ieeexplore.ieee.org/document/6663188

- "**Deviation from Trajectory Detection in Vision based Robotic Navigation using SURF and Subsequent Restoration by Dynamic Auto Correction Algorithm**", published in the MATEC Web of Conferences, Volume 28, 2015
  URL: https://doi.org/10.1051/matecconf/20152804002

Patents

- **Executing voice commands based on voice confidence and usage confidence metrics**
  - First Inventor

  URL:
  https://patentscope.wipo.int/search/en/detail.jsf?docId=IN241521158&tab=NATIONALBIBLIO&_cid=P10-K1XR98-54122-1

Certifications

- Oracle Certified Professional Java SE 6 Programmer
- Oracle Certified Professional Java EE 5 Web Component Developer