

DEBRAJ RAY

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SKILLS

- Backend - Java, Go, Python, Microservices, Spring-Boot, Spring-Security, Hibernate, Liquibase, Kafka, Apache Drill, Apache Hive, Parquet, Protobuf, Elastic Search, Kibana, GraphQL, REST, Websocket, CI/CD, Event-driven architectures, Multi-threading, OAuth, Docker, TDD, Splunk, Dynatrace, SonarQube, Gatling
- Azure - Kubernetes, Service Bus, Cosmos DB, SQL Server, Pipelines, DevOps, Deployment Center, Redis Cache, Azure Monitor
- AWS - Beanstalk, Amplify, S3, RDS, SQS, ElastiCache, DynamoDB, IAM, CloudWatch
- Frontend - HTML5, CSS, Material UI, Figma, AngularJS, Jasmine, Jest, life-cycle, components, services, directives, routing, RxJS
- Machine Learning - Numpy, Pandas, Seaborn, Matplotlib, Scikit, Pytorch, Spacy, Hugging-face, Azure AI search, Azure AI document intelligence, Reinforcement Learning, Neural Network architectures, NLP - embeddings, Large Language Model, LangChain

EXPERIENCE

Swiss Re Group, Canada • Software Engineer

(04/2023) - Present

- Full stack software developer building a SAAS underwriting solution ([Underwriting Ease](#)), to reduce underwriting time in Life & Health insurance by nearly 50%.
- Implemented APIs to pull medical records from third-party sources (such as MIB, Milliman, EHR, etc.), enrich with proprietary mappings (>5 Million records), and execute transformations resulting in consolidated, impactful, and interactive visualizations - that help speed up underwriting.
- The APIs are designed to be highly-concurrent with key focus on performance and scalability.
- Contributed to the designing of a microservice called Data-Hub, for provisioning ordering of underwriting documents. Also, securely receiving, storing, processing of the documents asynchronously.
- Upgraded a core API by storing data in a DAG data-structure, leveraging graph algorithms for efficient in-memory computations, resulting in reducing DB read-writes by 75%.
- Developed multiple UI widgets to render diagnoses, findings and medications using Angular JS. Also, implemented charting of lab test results, interactive PDF rendering, SSO-based login, and idle session timeout.
- Implemented integration with a NLP-OCR library to highlight and summarize key sections of attending physician statements, which are often over 1000 pages. This resulted in significant reduction of time and effort of underwriters.
- Currently collaborating with Data-Science team to prototype retrieving of medical findings from unstructured texts (such as doctor's notes) using Open AI GPT-4o and RAG.
- Support the team with analyzing and debugging production issues, responding to clients, handling of releases and deployments, and monitoring of cloud services.

Walmart Global Tech, India • Software Developer

(01/2020) - (07/2021)

- Developed backend APIs for different microservices, including, Reporting, Order Summary, One-Stop-Dashboard, and MyStore app.
- Provided 24 hours support on a weekly rotational basis for production issues such as unexpected behavior or infrastructure problems like high CPU utilization and response time degradation.
- Used Splunk and Dynatrace for monitoring logs and cloud resources.
- Followed best coding practices with rigorous test-driven development (>90% unit tests coverage).
- All APIs are performance tested using Gatling and a dedicated QA environment.
- Delivered multiple releases with full ownership, including tracking all changes, getting sign-off from stake-holders, collaborating with cross-functional teams to understand dependencies, deployment of infrastructure changes - DB, Kafka, and config changes.

insightsoftware / Simba Technologies, India • Software Developer

(02/2018) - (01/2020)

- Responsible for the development and maintenance of the Apache Drill JDBC and ODBC drivers. This included feature implementations, bug fixes and driver upgrades.
- Contributed to the development of cloud adapters in AWS. Cloud adapters, as compared to on-premise drivers, hugely simplified the setup, configuration, and maintenance of the drivers.
- Drove the efforts to automate release testing through mentoring and supervising junior engineers. Release testing time of the drivers was cut from 2 - 3 days to a few hours, as a result.

Motorola Mobility / Lenovo, India • Software Developer

(01/2015) - (02/2018)

- Contributed to the development of Moto Voice, a virtual voice assistant in Motorola phones.
- Fixed issues such as ANRs, app crashes, tombstones, etc.
- Played a key role in revamping the architecture with loosely packed components that worked independently and in parallel on streaming audio.
- Won the first prize in the Lenovo Global Hackathon 2016 for conceptualizing and prototyping the integration of Moto Voice into the ambient display of Motorola phones.

EDUCATION

University of Alberta, Canada • Master's Computer Science

(09/2021) - (09/2023)

- GPA: 4.0 / 4.0
- Researched strategic navigation in adversarial games using reinforcement learning
- Source code and demo of the work are [here](#)
- The research is published by AAAI / AIIDE ([link](#))

International Institute of Information Technology, India • PG Diploma in ML

(07/2018) - (07/2019)

- GPA: 3.9 / 4.0

PES Institute of Technology, India • Bachelor's Computer Science

(08/2011) - (08/2015)

- GPA: 8.96 / 10.0

PUBLICATION

- Navigation in Adversarial Environments Guided by PRA* and a Local RL Planner, AAAI / AIIDE ([link](#))
- Sentiment analysis of mixed language employing Hindi-English code switching, IEEE, ([link](#))
- Pipelining Acoustic Model Training for Speech Recognition Using Storm, IEEE, ([link](#))

PATENT

- Executing voice commands based on voice confidence and usage confidence metrics ([link](#))

CERTIFICATION

- Oracle Certified Professional Java SE 6 Programmer ([link](#))
- Oracle Certified Professional Java EE 5 Web Component Developer ([link](#))