Akshay Sanjay Mulik
Software Engineer
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Boston, MA.

TECHNICAL SKILLS

- Languages: Java, TypeScript, MS SQL Server, Python, R, Bash, Arduino C++, HTML5, CSS3
- Tools/Libraries/Frameworks: Junit, Jasmine, Karma, Node, Angular, Pyspark, Git, Jira, Airflow, Jenkins, Maven

Work Experience

Software Engineer. **GNS Healthcare Inc. DBA as Aitia** **Somerville, MA, USA.** 01/2022 – 03/2023

- As a part of the agile CD/CI team, contributed to the REFS platform(backend) and ModelExplorer (Frontend).
- Performed bugfixes in build scripts and maintained Jenkins CI/CD pipelines to automate daily, test and release builds.
- Upgraded the R-Java backend from JDK 8 to 11 and collaborated with DevOps to set up a new test server.
- Performed pre-release testing and created R scripts to visually compare accuracy of the results from REFS on disease models.
- Improved Django middleware to ingest large models (SQLAlchemy), reducing time to 1/8th for models with 30 million rows.
- Designed a script to estimate AWS cost per job on the AWS parallel cluster HPC with Sun Grid Engine (Ubuntu/Linux).

Algorithm & Simulation Intern. **GNS Healthcare Inc. DBA as Aitia** **Somerville, MA, USA.** 09/2021 – 12/2021

Performed experiments to optimize the frequently used simulation workflows in REFS, and reduced resource usage by 8-10x.

EDUCATION

M.S. in Computer Science (Data Analytics), Boston University (GPA: 3.56/4.00) **September 2019 - May 2021**
Relevant Coursework: Data Science with Python, Machine Learning, Big Data Analysis, Special topics in Cyber Security
MIT Sloan School of Management **June 2020 - August 2020**
Certificate Course: Artificial Intelligence: Implications for Business Strategy
Bachelor of Engineering in Information Technology, University of Mumbai, India **August 2014 - May 2018**

LEADERSHIP EXPERIENCE

Student Member **RAIT Alumni Association (RAA)** **Mumbai, India** **02,2015 – 04,2018**
Positions of responsibility: volunteer, technical head, general secretary, and mentor. Performed data cleaning and collection of data from offline sources. Part of organizing team for events: Alumni meets and mentorship events. Represented the school in NAAC accreditation assessment, where my school scored an 'A' grade.

ACADEMIC PROJECTS AND PUBLICATIONS

Bike Weather Forecast (Cloud function, Pub/Sub, ETL pipeline, Docker, IAM policies) (github.com/akshaymulik/Bike_weather)

- Designed a data architecture for data ingestion of live weather data in Google Cloud to improve bike ride experience.
- Built data pipelines using Google Cloud Composer (Apache Airflow), to store data in GCS and Big Query.

Data Analysis and Visualization with R (plyr, purr, tidy, ggplot2, corrplot, broom, ggfortify, pROC)

- Developed a Solar Energy business feasibility report by performing hypothesis tests, regression algorithms on geodata.

AI-based activity prediction (NumPy, pandas, scikit-learn, Linear Regression, seaborn, Tensorflow, Dataset Visualization)

- Performed PCA, decision tree, linear regression with visualization on the data after it was cleaned.
- Trained a model with 84% accuracy to predict types of motion by reading time series motion sensor data in Tensorflow.

Database Replication (Advance Database Project)

- Implemented peer-to-peer database replication on SQL Server 2019 on VMware and geo-replication on Azure Cloud.

Big Data Analysis (AWS Elastic MapReduce (EMR), EC2, Google Cloud Platform Dataproc, ETL, Apache Spark, Hadoop)

- Performed data cleaning with RDDs, linear regression on a dataset from scratch, and logistic regression with pyspark library.

Automated Indicators for Vehicles**(** **github.com/akshaymulik/aiv** I2C MPU6050, android share GPS**)**

- Developed a GPS and motion sensor-based embedded device with raspberry pi and Arduino to automate turn signals.
- Publication: International Journal of Computer Science and Information Technology (e-ISSN: 1694-2329) Volume 5, Issue 3.

Connected Plants Watering System (Arduino, Raspberry Pi, Wi-Fi, solar, and soil sensors)

- Publication: An IoT concept device powered by solar energy to maintain plants provides Wi-Fi access in a city.

RFID Based Attendance system **(** **github.com/akshaymulik/ajdbc** , SPI MRFC522**)**

- Built an RFID scanner with Arduino connected to a MySQL server via JDBC to record and display attendance on a JSP page.

Implemented Bresenham's line plotting algorithm on Arduino with 6x6 LED display (**github.com/akshaymulik/bresenham-LED**)