

## Akshay Sanjay Mulik

Software Engineer

[linkedin.com/in/akshaymulik](https://www.linkedin.com/in/akshaymulik) • <https://github.com/akshaymulik> • akshaymulik399@gmail.com • +91-9167081745  
Mumbai, MH.

### 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 (middleware, frontend).
  - Maintained Jenkins CI/CD pipelines to automate building and deployment of 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 generate graphical reports to help visually compare accuracy of the results from REFS Ai software on disease models.
  - Improved Django middleware to clean and process Big Datasets with 30 million rows using pandas and NumPy. Implemented multithreading (SQLAlchemy/Pandas), reduced overall time to 1/8th for processing and loading into MySQL.
  - Designed a script to estimate AWS cost per job on the AWS parallel cluster HPC with Sun Grid Engine (Ubuntu/Linux).
  - Contributed to Model Explorer Angular Frontend used for exploring graphs of biomarkers/proteins generated from cancer and disease models. Performed UI bug fixes, code review, and testing. Added D3.js based context menu to select and color multiple biomarkers on graph, enhanced save and load functionality for models.
  - Managed user accounts on production and performed necessary tasks to keep the production up and running.

- 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 on HPC by 8-10x. Translated R code into Java, in R-Java package, and optimized the workload to distribution parameters to improve speeds.

### 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

- Developed and hosted a NestJs/Tailwind CSS based portfolio website: <https://akshaymulik.github.io/akshay-portfolio/>
- Bike Weather Forecast(Cloud function, Pub/Sub, ETL pipeline, Docker, IAM policies [github.com/akshaymulik/Bike\\_weather](https://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.
- 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.
- Automated Indicators for Vehicles([github.com/akshaymulik/aiiv](https://github.com/akshaymulik/aiiv) I2C MPU6050, android share GPS, Cmake, Shell, C++/C)
- 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.](#)

Built Android Open-Source OS for LG G3 D855 on Ubuntu, self-learned OS building with help of open-source resources:

- Added changes to device and kernel resources of LG G3 to build with latest Android OS released by Google. Repository names: [github.com/akshaymulik/](#) : [AOSP-Custom-Builds-with-debug](#), [android\\_device\\_lge\\_g3-common-other](#), [android\\_kernel\\_lge\\_g3-cm](#), [android\\_kernel\\_lge\\_g3](#)

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](#))