

# Roshan Ramesh . Jarvis Consulting

Experienced recent Electrical Engineering graduate with a knack for creative Problem solving. Skills include delegation, organizational, time-management with prioritizing workflow for optimal throughput. Disciplined, encouraging, strong communicator and a warm extrovert with the ability to bond among introverts with ease. As an Electrical Engineering Graduate aiming to shift into Software(Data), the Jarvis training program promised exactly what was required to hone the data engineering skills through its rigorous industry standard mentoring. Keen to apply learned skills from jarvis in software and IT to improve client, users, employees and administration QOE.

## Skills

**Proficient:** Core Java, Springboot, Python, Linux/Bash, RDBMS/SQL, Agile/Scrum, Git, Matlab, Wireshark & Simulink

**Competent:** Mockito/Junit, REST APIs, Spark & Hadoop, C++/C, Computer Networking

**Familiar:** Google Cloud Platform, Visual Studios, VHDL, ARM Assembly, Machine Learning, HTML

## Jarvis Projects

Project source code: [https://github.com/jarviscanada/jarvis\\_data\\_eng\\_demo](https://github.com/jarviscanada/jarvis_data_eng_demo)

**Cluster Monitor** [GitHub]: Developed a real time cluster monitoring bash agent with bash scripts and SQL that collects and records hardware specifications and node usage information(CPU/memory). PostgreSQL database was used to store information of all nodes, contained in a docker instance for future references. Cronjob was used for automatic resource usage collection. The Linux cluster administration team's business questions such as CPU/Memory usage were answered using SQL queries in order to be used in future resource planning.

**Core Java Apps** [GitHub]:

- **Twitter App:** Implemented a Java8 based TwitterCLI application that interacts via REST API using HTTP requests. The application helps users perform CRUD operations on Twitter posts and creation of tweet with a geotag which has a JSON format output. Implementation made possible by Spring framework, MVC architecture along with Junit/Mockito testing libraries.
- **JDBC App:** Developed a JDBC based application which bridges RDBMS and the Java application. Users can connect to PSQL database to perform CRUD operations using the DAO pattern. JDBC is dockerized using the PostgreSQL instance to make CRUD (Create, Read, Update, Delete) operation possible.
- **Grep App:** Designed Java 8 Stream APIs with lambda expressions that uses pattern matching to search recursively through files in a directory and outputs the matched lines into a new file.

**Springboot App** [GitHub]: Developed a three-tier REST API application using Springboot which simulates an online stock trading platform. The trading platform features a 3 layer microservice architecture, managed by maven, uses Tomcat web-servelet, IEX cloud as datasource and PSQL database to persist data. Spring DAO was used to handle data access in PSQL. Junit and Mockito were used for testing/integration. For convenient deployment, the application was dockerized through two containers i.e., one for PSQL server and one to start application.

**Hadoop** [GitHub]: Not Started

**Python Data Analytics** [GitHub]: ((IN PROGRESS - to be edited)) Designed and implemented a PoC using Python, Jupyter Notebook, Panda Dataframe and Numpy to segment the clients in order to design targeted marketing campaigns. Results/solutions were displayed using tables and plots along with RFM segmentation on customers based on interactions and sales revenues.

**Spark** [GitHub]: Not Started

**Cloud/DevOps** [GitHub]: Not Started

## Highlighted Projects

**Photonics (Capstone):** Directed Laser Energy propulsion Team leader - Designed and implemented a project build of a Yb-DCFA laser Amplifier to augmenting 10mW input to 1W output. McGill Interstellar experimental flight in collaboration with UCSB (Breakthrough Starshot).

**Network Programming and DNS:** Implemented a domain name system(DNS) client using Java sockets for a specified existing network protocol along with TCP/IP and Link Layer analysis. The Java sockets can be invoked through the cmd line(STDIN) to send queries to the server using UDP and return the response to display using STDOUT.

**Fault Tolerance:** Designed a communication network using Python to meet a reliability goal and to maximize reliability for a given cost constraint. The program takes a text file that defines the parameters as input.

**Robotics:** Designed and constructed an autonomous robot to compete in a 1-1 version of capture the flag. The programming of the robot was done using Java LeJos plugins, algorithm-based design, and finite state machines. As one of the winning teams our robot received parameters from the game controller, localized itself on the grid, navigated, traversed the zip line using a 3D printed chassis, located and captured the enemy flag, and returned to the starting point.

**Ticket Reservation System/Web page traversal/Sudoku solver:** Designed and implemented an airline ticket reservation system using C++ and OOP methodology. Designed and implemented a Web page traversal program and a Sudoku solver using algorithm-based design.

## Professional Experiences

**Associate Data Engineer, Jarvis (2020-present):** Underwent the transition from my Electrical background to software. Acquired technical acumen for Data Engineering through their rigorous training program. Mastered the Agile methodology and worked on Big Data concepts/projects including Java, Spring, Cloud, Python data analytics, Hadoop, Spark, Linux and RDBMS.

**Junior Electro-Optical Engineer, Reflex Photonics (2019):** Involved in research and design aid for 5G, 10G, 12G and 28G rugged, High-speed optical interconnects. More key tasks include Tranceiver housing and spider-board analysis/troubleshooting and Noise analysis of optical tranceivers along with extensive testing of critical product lines. Extensive use of Labview GUI and Python scripting to automate data-logger/temperature test station.

## Education

**McGill University (2015-2020),** Bachelor of Engineering, Electrical Engineering - James McGill Entrance Scholarship

## Miscellaneous

- Student Peer Support Network - Administered safety of freshmen along with mentoring and emergency response
- National Cadet Corps (India) - Contingent Leader
- Communitas - Held open doors and workshop based rehabilitation for ex-convicts
- English Teacher - Volunteered for 3 months of English teaching in a remote underprivileged School through an Indian NGO
- Rifle Shooting
- Boxing - Orthodox
- Horseback Riding
- Freelance Photography
- Natural/Chemical fragrance composing using distillates/organic chemical compounds
- Languages: English - French - Hindi/Urdu - Tamil - Malayalam - Bengali - Sanskrit(Classical) Beginner certified