ROSHAN SUWAL

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RESEARCH INTERESTS

- Big Data Technologies, Distributed System, Data Science, and Artificial Intelligence

EDUCATION

Bachelor in Electronics and Communication Engineering — Nov 2016-Apr 2021
Institute Of Engineering Thapathali Campus, Tribhuvan University
Relevant Coursework: Data Mining, Big Data, and Artificial Intelligence.

WORK EXPERIENCES

Data Engineer — Feb 2023-Aug 2023
GrowByData Service Pvt. Ltd — *Lalitpur, Nepal*

- Design, develop, and maintain data pipelines for marketing data for SEO optimization through data ingestion, ETL, and visualization in the data lake

Big Data Developer — Jul 2021-Jan 2023
Ekbana Solutions Pvt. Ltd — *Lalitpur, Nepal*

- Design, develop and maintain data pipelines using ETL processes and analyze vast data stores and find useful insights.
- Database architecture design, data modeling, and data migration either by using existing migration tools or by developing them.
- Designing, building, installing, configuring, and supporting big data applications maintaining security and data privacy.

Big Data Developer Trainee — Apr 2021-Jun 2021
Ekbana Solutions Pvt. Ltd — *Lalitpur, Nepal*

- Studied data structure and algorithms, design patterns, memory management, concurrency and parallelism, and cluster computing.
- Learned about Cassandra, Elasticsearch, and Elasticsearch plugins.
- Developed custom processors, tokenizers, and aggregation for Elasticsearch: CastToString processor, NumberToString processor, custom tokenizer, path-hierarchy aggregation.

RESEARCH EXPERIENCES

Lightweight Distributed Message Queue System (GitHub) — Oct 2021-Mar 2022

- Used master-slave architecture to build a resource-light distributed event streaming platform for data pipelines, stream analytics, and data integration
- Designed and developed a multi-feature policy-based optimized search tree with $O(nlog(n+k))$ time complexity that enables searching records using multiple features like offset, and timestamp.

Non-intrusive Blood Glucose Monitoring with Smartphones — Nov 2019-Oct 2020

- A research project that used deep learning techniques to predict future glycemic events using historical glucose levels and physiological factors
- Built an android application that monitors patient glucose levels using a CGM sensor and BLE technology, records physiological factors, and alerts future glycemic events using the model.

Generic Data Migrator (GitHub) — Mar 2022-Apr 2022

- A general data migration tool, inspired by real-world problems encountered while migrating data between databases.
- Designed and developed a pluggable application capable of migrating data using spark along with data filtration, processing, and transformation using a simple configuration.

Data Layer - DAAS Application [(GitHub)](GitHub) Jul 2021-Aug 2021

- A DAAS-Data As A Service Application developed to build a user-friendly interface to access data from different sources using simple SQL queries through rest endpoints.
- Built a query conversion engine facilitated with data security, SQL injection detection, and database protection.

COMMERCIAL PROJECTS

Veriq System Aug 2021- Feb 2022

- Full stack web application on embedded devices collaborated with Mico BioMed that automate the medical testing procedure, manage the medical actions, and store, analyze and visualize the test results on the web.

API Management System Sep 2021-Dec 2021

- A scalable, multi-cloud API management platform for securing, publishing, and analyzing APIs.

Bigmart Jun 2022-Nov 2022

- Built ETL pipeline to ingest data from bigmart server, analyzed, filtered, and manage it into Elasticsearch and Cassandra to perform data analysis and visualize useful insights.

SKILLS

Programming Skills	Java, Python, Scala, Android, C++, C
Database	Postgres, MySQL, MariaDB
	Cassandra, HBase, MongoDB,
	Redis, Neo4j
Big Data Tools	Spark Framework, MapReduce Framework, Hadoop Ecosystem
	Elasticsearch, ELK Stack, Hive, Apache Airflow, Beats
	Kafka, RabbitMQ
ML Tools	Tensorflow, Pytorch, Sklearn, Spark MLlib
Version Control	git
Containerization	Docker, Kubernetes

AWARDS AND ACHIEVEMENTS

- Awarded as the best student in the Department of Electronics and Computer Engineering, IOE, Thapathali Campus (2017 & 2021)
- Awarded Full Scholarship to study Bachelor of Engineering at IOE, Tribhuvan University (2016)
- Awarded the Golden Jubilee Scholarship by the Embassy of India, Kathmandu (2016)