

Sabin Dahal

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PROFESSIONAL SUMMARY

Software Engineer with 7+ years of experience developing and optimizing data pipelines and ETL pipelines, data analytics and scalable backend architectures. Strong foundation in SQL, Python, data modeling, schema design, data integration, and performance optimization. Experience applying machine learning and AI techniques to real-world data problems, and applying it to modernize legacy data systems. I have strong problem-solving skills, adaptability in ambiguous environments, and the ability to communicate effectively with cross-functional teams.

EDUCATION

MS in Computer Science

Jan 2024 - Dec 2025

GPA: 4.0/4.0

University of Missouri, Columbia, MO

Bachelor's in Computer Engineering

2013 - 2016

GPA: 3.5/4.0

Tribhuvan University, Nepal

PROFESSIONAL EXPERIENCES

Software Developer

Jan 2026 - Present

Marshall University, Columbia, MO

- working on a distributed job-tracking and execution platform for large-scale AI workflows using React, FastAPI, asynchronous workers, and automated pipeline orchestration.

Software Developer / Research Assistant

Jan 2024 - Dec 2025

University of Missouri, Columbia, MO

- Modernized a legacy bioinformatics data platform by restructuring data pipelines and resolving system inefficiencies, improving data accessibility and reliability for downstream analysis.
- Designed and optimized MySQL schemas for large-scale multi-omics datasets, enabling faster query performance and efficient analytical workflows.
- Developed data-driven workflows integrating cloud storage and automated pipelines, improving reproducibility and scalability of data processing tasks.
- Collaborated with domain experts to translate complex scientific requirements into data models, analytical tools, and intuitive dashboards for non-technical users.

Sr. Data Engineer – Java

Oct 2022 – July 2023

Smart Data Solutions, Eagan, MN

- Designed and optimized a data processing system for healthcare claims, improving data accuracy, validation, and operational efficiency.
- Implemented data validation and authentication logic to ensure integrity of structured and unstructured claim data.
- Worked in an Agile environment to analyze requirements, prioritize tasks, and deliver data-driven solutions aligned with business needs.

Software Engineer – Java

Sep 2020 – Oct 2022

Cedar Gate Technologies, Greenwich, CT

- Designed and enhanced ETL pipelines for large-scale data ingestion, transformation, and integration, improving data availability for analytics and reporting.
- Integrated cloud-based storage (Amazon S3) to support scalable data pipelines and efficient data access.
- Improved data transformation workflows, reducing processing time and increasing efficiency in generating structured datasets for downstream analysis.

Jr Data Analytics Engineer

July 2018 – April 2020

DPR Digital Solution, Nepal

- Engineered a pharmacy and hospital billing system for a remote area without internet access by setting up local server infrastructure and adapting the system to function without online-dependent libraries, ensuring robust offline operations.

Jr Developer

Aug 2016 – Apr 2018

Vector Groups, Nepal

- Developed and maintained a web portal for a subscription-based member management system for a large organization, streamlining user document submission, admin approval workflows, and secure online payment processing for membership fees.

SKILLS

Programming Languages: Python, R, Java, JavaScript, PHP, SQL, C, C++

AI Algorithms & Statistics: Regression, Classification, Statistical Modeling, Hypothesis Testing, Predictive Modeling, Model Evaluation (ROC, Confusion Matrix), Probability, Data Analysis

Frontend & UI Technologies: JS, AngularJS, React, jQuery, Bootstrap, Highcharts

Backend & Full-Stack Tools: Laravel, REST API Development, System Debugging, Profiling, Algorithm Optimization

Databases: MySQL, PostgreSQL, MongoDB

DevOps & Version Control: Git, Docker, Linux Environments, Jenkins, CI/CD Pipelines, ML Flow

Systems & Architecture: System Design, Distributed Systems, Multithreading, API Integration, Performance Optimization

PUBLICATIONS

- Lyu, Z.; **Dahal, S.**; Zeng, S.; Wang, J.; Xu, D.; Joshi, T. CrossMP: Enabling Cross-Modality Translation between Single-Cell RNA-Seq and Single-Cell ATAC-Seq through Web-Based Portal. *Genes* 2024, 15, 882

LEADERSHIP AND AWARDS

Best Poster Presentation award: 1st Runner up on best Poster Presentation award at Show me Research Week.

Travel Award: Travel award of USD 1000 on 2024 International Symposium on Plant Lipids

Winner: Winner of the interdisciplinary case competition 2024 at University of Missouri

Assistant Director: Assistant Director of Secretary at Graduate Professional Council

Outstanding General Assembly Member: Recipient of Outstanding General Assembly member for Graduate Professional Council, Mizzou

Secretary: Secretary at EECS Graduate Student Association