

Sabin Dahal

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PROFESSIONAL SUMMARY

Full-stack Software Developer with 7+ years of professional experience building and maintaining scalable internal systems using PHP, Java, Angular, JavaScript, SQL, and modern web tools. Strong background in debugging, profiling, system performance optimization, and updating legacy applications. Skilled in designing secure, high-performance backend systems and intuitive front-end workflows. Known for problem-solving, rapid learning, and supporting fast-growing teams with reliable, clean, and maintainable code.

PROFESSIONAL EXPERIENCES

Software Developer / Research Assistant

Jan 2024 – Present

University of Missouri, Columbia, MO

- Modernized a large legacy PHP/Laravel bioinformatics platform (KBCommons) by debugging outdated components, upgrading the PHP stack, and restoring full system functionality across data processing tools and workflows.
- Designed optimized MySQL schemas for multi-omics datasets, improving query performance, reliability, and overall system scalability.
- Built **CrossMP**, a PHP- and AngularJS-based internal portal integrating Google Drive APIs, secure file handling, and Docker-based deep learning job launchers to automate analysis pipelines.
- Collaborated with domain scientists and end users to gather requirements and translate them into intuitive front-end flows and maintainable backend services.

Sr. Software Engineer – Java

Oct 2022 – July 2023

Smart Data Solutions, Eagan, MN

- **Quickclaim:** Led the design and optimization of a paperless claim processing system tailored to the U.S. healthcare industry using core Java. Implemented new claim authentication features with test-driven development in an Agile Scrum environment, covering development, unit testing, deployment, and post-release monitoring.

Software Engineer – Java

Sep 2020 – Oct 2022

Cedar Gate Technologies, Greenwich, CT

- **File Mapper:** Implemented features in an in-house ETL tool to automate manual project management workflows. Integrated Amazon S3 for streamlined file handling and the Outlook Calendar API for automated task scheduling, reducing workload by roughly 10 hours per sprint per project manager and minimizing errors.
- Added functionality to combine and split pre-processing layouts, significantly reducing the time required to create new data structure templates.

Jr Software 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: PHP, Java, Python, SQL, C, C++

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

EDUCATION

MS in Computer Science

Jan 2024 - Dec 2025

University of Missouri, Columbia, MO

Bachelor's in Computer Engineering

2013 - 2016

Tribhuvan University, Nepal

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