

# Shrestha K. Dilip

SOFTWARE ARCHITECT · TEAM LEAD

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“Stand in the light to cast the shadow of the change you wish to be.”

## Summary

A highly accomplished and results-driven Senior Software Engineer and Team Lead with over a decade of experience in architecting, developing, and deploying robust, scalable, and secure software systems. Proven expertise in cloud-native technologies, microservices, and event-driven architectures, with a strong background in the fintech domain, including payment processing and PCI DSS compliance. A natural problem-solver with a love for complex mathematical challenges and a keen interest in the applications of Artificial Intelligence and cybersecurity with some hands on experiences. Adept at leading and mentoring engineering teams to foster innovation and achieve strategic business goals.

## Skills

<b>Programming Languages</b>	Java, Python, PHP, C/C++, SQL
<b>Backend</b>	Spring (Boot, Security, Data), Hibernate, Django, Flask, Laravel, Microservices
<b>Frontend</b>	React, Redux, Leaflet.js
<b>Databases &amp; Caching</b>	PostgreSQL (PostGIS), MySQL, MongoDB, Redis
<b>Cloud &amp; DevOps</b>	AWS, Docker, Kubernetes, Helm, Jenkins, GitLab CI, Git, Prometheus, Grafana
<b>Protocols &amp; Security</b>	Apache Kafka, REST (OpenAPI), ISO 8583, EMV, OAuth 2.0, JWT, PCI DSS
<b>Academics</b>	Ananalysis and Design of Algorithms, Data Structures, Optimizations, Artificial Intelligence

## Education

### Gandaki College of Engineering and Science

BACHELOR IN SOFTWARE ENGINEERING (BESE) – **3.48(CGPA)**

Pokhara, Nepal

2008 – 2012

### Millennium Higher Secondary School

HIGHER SECONDARY EDUCATION BOARD(HSEB) – **65%**

Tansen, Nepal

2006 – 2007

### Gandaki Higher Secondary Boarding School

SCHOOL LEAVING CERTIFICATE(SLC) – **78%**

Pokhara, Nepal

- Received a scholarship granted on the basis of academic excellence and financial need.

## Work Experience

### Paymentology

London, United Kingdom - Remote

SENIOR SOFTWARE ENGINEER & TEAM LEAD

Jan 2015 – Present

- Architected and implemented core microservices for a cloud-native global issuer-processor platform using Java 17, Spring Boot 3, and an event-driven architecture with Apache Kafka.
- Led the design of RESTful APIs (OpenAPI), ensuring seamless integration with payment gateways and financial institutions.
- Engineered high-throughput transaction processing systems using Spring Data JPA, Hibernate, and distributed Redis caching.
- Implemented robust security using Spring Security, OAuth 2.0, and HSMs to ensure PCI DSS compliance.
- Developed and integrated ISO 8583 messaging and EMV chip card transaction flows for financial network communication.
- Deployed and managed containerized applications on AWS using Docker, Kubernetes, and Helm, following GitOps principles.
- Championed Kubernetes best practices, including resource management (requests/limits), RBAC, and robust liveness/readiness probes for high availability.
- Established a comprehensive observability stack with Prometheus, Grafana, and Spring Cloud Sleuth/Zipkin for monitoring and distributed tracing.
- Led and mentored a team of engineers, fostering a culture of collaboration and continuous improvement.
- Drove critical architectural decisions to align technical strategy with business objectives, ensuring platform scalability and reliability.

## IT Deurali Inc. Pvt. Ltd.

Pokhara, Nepal

SENIOR SOFTWARE ENGINEER

Jan 2014 – Present

- Architected and developed a diverse range of web applications using PHP (Laravel, CodeIgniter) and Python (Django, Flask).
- Built dynamic, responsive user interfaces with React, employing Redux for state management and optimizing for performance.
- Developed geospatial solutions using Leaflet.js, PostGIS, and GeoServer for a major Australian client.
- Implemented secure authentication (JWT, OAuth 2.0) and built robust CI/CD pipelines with Jenkins/GitLab CI.
- Managed a variety of databases including PostgreSQL, MySQL, and MongoDB.
- Made key architectural decisions for complex web applications, ensuring scalability and security.
- Mentored junior developers on software design best practices and led technical communication with major clients to translate business requirements into robust solutions.

## Gandaki College of Engineering and Science

Pokhara, Nepal

LECTURER

Aug 2013 – Jan 2020

- **Core Programming:** Taught C, C++, and Java, covering OOP, SOLID principles, design patterns, multithreading, and JVM internals.
- **Algorithms & Theory:** Instructed on analysis and design of algorithm, dynamic programming, graph theory, data structures, and discrete mathematics.
- **Distributed Systems:** Delivered lectures on distributed architectures, computer network, network programming (TCP/IP, sockets), and security (TLS/SSL, encryption).
- Mentored students on software engineering best practices, including version control (Git), debugging, and agile methodologies.

## Bajra Technologies

Kathmandu, Nepal

SOFTWARE DEVELOPER

Jan 2013 – Jan 2014

- Developed e-commerce websites and applications using PHP and MySQL.
- Implemented a live streaming solution by configuring a Red5 Media Server for real-time video delivery.
- Created client-side applications using ActionScript to interact with the streaming server.

## Projects

### Touch Sense Live Paper Keyboard

Major Project

GANDAKI COLLEGE OF ENGINEERING AND SCIENCE

Jul 2012 – Dec 2012

- Developed a desktop application that used a webcam as a sensing device to interpret a paper sketch as a functional keyboard
- Optical character recognition
- Depth sense using single camera
- Press clock cycle

### Nepali to English Translator

Minor Project

GANDAKI COLLEGE OF ENGINEERING AND SCIENCE

Jan 2012 – Jun 2012

- Created a desktop application to translate Nepali sentences into English.

### Scrum Poker

Self Project

[HTTPS://GITHUB.COM/NEWA-PASA/SCRUM-POKER](https://github.com/NEWA-PASA/SCRUM-POKER)

May 2025

- Real-time Scrum Poker application to help agile team to estimate a ticket
- Create and join game rooms with real-time updates for participants joining and voting.
- Visual representation of votes (Pie Chart).

### WebSpy

Self Project

[HTTPS://GITHUB.COM/NEWA-PASA/WEBSPY](https://github.com/NEWA-PASA/WEBSPY)

May 2025

- A Python tool to scrape websites, identify links, and test for common web vulnerabilities like XSS and SQL Injection.
- Generate vulnerability report

### Fraud Detection

Self Project

[HTTPS://GITHUB.COM/NEWA-PASA/FRAUD-DETECTION](https://github.com/NEWA-PASA/FRAUD-DETECTION)

Jul 2025

- A machine learning pipeline for detecting fraudulent credit card transactions, covering data preprocessing, model training with imbalance handling, comprehensive evaluation of multiple classifiers, and deployment as a REST API using Flask. Utilizes the "Credit Card Fraud Detection" dataset from Kaggle.

## Extracurricular Activity

### GCES IT Mahotsav - IV

Project Expo

CORE MEMBER & PROJECT MANAGER

Sep 2011

- Re-initiated College project expo program which was halted for 3 consecutive years
- Actively worked with entire college student getting technically involved and collected twenty project for expo.

## GCES IT Mahotsav - V

ADVISOR

- Helped juniors to conduct Project Expo
- Conducted multiple technical sessions to help completion of projects

*Project Expo*

Sep 2012

## Pokhara Metropolitan

PANELIST

- Reviewing the idea and their implementations
- Deliberation and Decision Making

*Idea Pitching*

Jan 2024

## Presentation

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### Developers Community

*Pokhara, Nepal*

PRESENTER FOR <12 YEARS OF ENTREPRENEURSHIP>

Nov. 2017

- Shared my life experiences as Entrepreneur
- Motivational experience sharing Entrepreneurs

### Build Your Future in IT

*Gandaki University, Pokhara, Nepal*

PRESENTER FOR <JOURNEY FROM ACADEMIA TO ENTREPRENEUR>

Jul. 2024

- Explained difference between Academia and Enterprise
- Discussed how can we overcome gap between Academia and Enterprise
- Future in CS/IT
- How to prepare ourself with such a rapid the development of AI

### GCES IT Expo

*GCES, Pokhara, Nepal*

PRESENTER FOR <MICROSERVICES>

Jul. 2024

- Monolith vs Microservice
- Thinking Microservice
- Hands on Demo

## Writing

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### Cybersecurity

[HTTPS://GITHUB.COM/NEWA-PASA/CYBERSECURITY](https://github.com/NEWA-PASA/CYBERSECURITY)

Apr. 2025

- A 30-day curriculum covering essential cybersecurity concepts, tools, and techniques. Includes daily topics from an introduction to cybersecurity, networking, ethical hacking, and web security, to advanced areas like incident response and cloud security. For educational use only.

## Courses & Certificates

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**Microservices with Java Spring Boot and Spring Cloud**

Udemy

**Docker - Introducing Docker Essentials, Containers, and more**

Udemy

**Learn Java Unit Testing with Junit & Mockito in 30 Steps**

Udemy