

Shwapnil Shrestha

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Summary — Software Engineer with over 5 years of experience building and scaling enterprise applications using C#.NET. Proficient in modern backend designs like Microservices, CQRS, and gRPC, along with cloud deployments on AWS. Proven track record of upgrading legacy frameworks, optimizing database performance, and working effectively with cross-functional teams.

Skills

Primary Stack	C# .NET (.NET Core/.Framework), ASP.NET Web API, WPF	Data Science & ML	Supervised Learning, Predictive Modeling, Feature Engineering
Primary Architecture	Microservices, CQRS, RabbitMQ (Event-driven), Hangfire (Background Jobs), gRPC (Protobuf), RESTful APIs, ABP Framework	Data Tools & Packages	caret, dplyr, ggplot2, rpart, naivebayes, RShiny
Primary Databases	MS SQL Server, PostgreSQL, Redis (Caching)	Secondary Databases	Oracle, MySQL
Secondary Stack	Node.js, Python, R (Data Analytics), Bash, SQL, LaTeX	Cloud & DevOps	AWS (SQS, Lambda, EC2, S3), Docker, Git, CI/CD pipelines
		SDLC & Management	Agile / Scrum, Team Leadership, Technical Mentorship
		Collaboration Tools	Trello, ClickUp, Apache Subversion (SVN)

Experience

Innovate Tech Pvt. Ltd.
Software Engineer

Jan 2022 – Present

- Lead the design, refactoring, and execution of distributed applications utilizing domain-driven design, decoupling dependencies for high-volume internal services.
- Researched and executed large-scale database archiving strategies for massive datasets, leveraging data analysis to uncover performance insights and reduce operational storage costs.
- Actively mentor junior and mid-level developers through structured code reviews, technical knowledge sharing, and organizing company-wide tech talks.
- Partner closely with QA teams and project stakeholders to design automated delivery pipelines, ensuring smooth, risk-mitigated production deployments.

Key Hosted & Greenfield Projects:

- **MySecondTeacher (mysecondteacher.com.np)**: Spearheaded technical research and code optimization on a legacy platform; played a pivotal role in the comprehensive **framework version upgrade from .NET Core 2 to .NET 6**, minimizing technical debt, restructuring breaking changes, and heavily maximizing server-side runtime performance. Integrated **Hangfire** for asynchronous background job processing, executed a critical **cloud migration of AWS Lambda functions from Node.js to .NET** for optimized execution speed, and incorporated **Redis Caching** to heavily scale data throughput. Refactored inter-service communication patterns utilizing optimized **HttpClient** factory patterns.
- **HomeSchool Asia (homeschool.asia)**: Contributed to the core system architecture of the new e-learning platform; successfully implemented the **CQRS pattern** to decouple read/write operations, integrated **RabbitMQ** to drive robust asynchronous event-driven communications, and deployed **gRPC via Protocol Buffers (Protos)** to establish low-latency, strictly typed microservices communication.
- **Internal Architecture R&D (Assessment Taking Services)**: Formulated and built foundational greenfield frameworks from scratch during my tenure; mapped out scalable boilerplate logic, database entity schemas, and decoupled core subsystems by implementing the **CQRS pattern utilizing MediatR** to enforce clean, localized in-process request dispatching.
- **Internal Greenfield Identity Service Setup**: Architected and established a centralized standalone identity management system decoupled entirely from core business applications. This independent project structure successfully bypassed the rigid monolith-first authentication and multi-tenancy constraints inherent in legacy frameworks like MySecondTeacher's instance of the **ABP Framework**, allowing modular cross-platform security scaling.

IET Technology Pvt. Ltd.

Apr 2022 – Aug 2023

Software Engineer & Team Lead (FTE Contract)

- Directed a cross-functional team of 7 developers through the complete software development life cycle (SDLC) under strict delivery deadlines.
- Optimized asynchronous data pipelines, evaluated back-end communication, and maintained highly secure, cost-effective service connections.

Key Production Projects:

- **Regrow / ALOI Fintech Platform:** Engineered critical backend components for an impact-driven digital loan-tracking platform; built and maintained scalable, secure RESTful web services to safely track target investments.

Itahari International College

Sep 2023 – May 2024

Final Year Project Supervisor

- Guided capstone-stage IT students through systemic software design, translating complex academic concepts into functional, real-world software applications.
- Unblocked architectural and technical hurdles by providing expert troubleshooting in system design, debugging, and database schema implementation.

Umbrella Solution Pvt. Ltd.

Aug 2019 – Dec 2021

Software Engineer

Dec 2019 – Dec 2021

- **Manakamana Cable Car Loyalty System:** Architected backend admin dashboard models and transactional reporting modules for an enterprise **web application** using C# and .NET adhering to the **MVVM architectural pattern**. Integrated functional graphing features for localized member transaction metrics and data analysis. Heavily optimized the underlying database engine utilizing **Microsoft SQL Server** via complex Stored Procedures, strategic index optimization, and advanced query tuning.

C# Developer (Intern)

Aug 2019 – Dec 2019

- Conducted research to explore emerging trends and best practices in software development, focusing on optimizing performance, scalability, and security.
- Architected and developed a standalone **desktop ticket rendering application** using **WPF (.NET Framework)** for a fun park workflow to support both online ticket sales and real-time in-park transactions, ensuring a smooth customer experience.

Que Pay Pvt. Ltd.

Dec 2018 – May 2019

Android Developer (Intern / Trainee)

- Collaborative feature work included implementing location-based tracking components to support simulated fleet synchronization algorithms within target applications.
- Conducted performance profiling across test suites to assure component stability and optimal device deployment frameworks.

Academic Projects & Research

Master's Thesis — London Metropolitan University / Islington College

May 2023

Title: Prediction of Coronary Heart Disease (CHD) Based on Age Group

- **Research & Methodology:** Engineered an end-to-end predictive machine learning pipeline in R to analyze structural cardiovascular health risk factors from clinical patient data; applied advanced academic concepts of **Big Data scalability** and **Data Warehousing architectures** to structure heterogeneous source environments.
- **Data Preprocessing & ETL:** Designed and executed comprehensive **ETL (Extract, Transform, Load) pipelines**; handled complex data cleansing configurations, resolved missing values within critical obesity index metrics, binarized categorical strings, and executed feature scaling to ensure data normalization and statistical integrity.
- **Machine Learning Pipeline:** Constructed, optimized, and compared three distinct supervised learning architectures: Linear Support Vector Machines (SVM), Naïve Bayes, and Decision Trees using an 80:20 validation split.
- **Key Findings & Analysis:** Identified Linear SVM as the top-performing model with an accuracy rating of 77.17%. Leveraged Boosted Tree Graphs to map specific risk metrics, identifying “age” and “tobacco” as primary independent predictors while charting clear diagnostic trends across age intervals.
- **Deployment:** Designed and deployed a dynamic RShiny web application to interface directly with back-end models, providing real-time data visualization for risk factors, confusion matrices, and predictive outcomes.

Bachelor's Final Year Project — London Metropolitan University

2019

Project: Hamro Sumo Sewa (Passenger Vehicle-Booking Platform)

- **Architecture & Engineering:** Spearheaded mobile interface development and functional workflow design for a passenger transit routing system, successfully hosting the application live on the Google Play Store for academic evaluation and deployment testing.
- **Feature Implementation:** Built real-time location components to handle simulated fleet positioning data, establishing cohesive multi-passenger sync algorithms.

Education

London Metropolitan University – Islington College

2021 – 2023

MSc IT & Applied Security (Data Analytics)

London Metropolitan University – Islington College

2017 – 2019

BSc (Hons) Computing

Makwanpur Multiple College

2012 – 2015

Science (Higher Secondary Education Board)

Majors: Biology, Mathematics

Certifications

– Alibaba E-commerce Training - eTouch Co. Ltd.

References

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