

Narayan Bhattarai

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Professional Summary

Skilled software engineer with **5+ years of experience** designing and delivering scalable applications across small to large, complex projects using **Java and C#**. Proven ability to analyze requirements, translate business needs into effective technical solutions, and drive features through the full software development lifecycle. Demonstrated strength in building event-driven, microservices-based systems, with a solid understanding of concurrency, distributed system design, and service-oriented architecture.

Education

University of South Dakota MS in Computer Information Science Relevant Coursework: Computer Vision, Pattern Recognition and Machine Learning, Distributed Systems, Reinforcement Learning, Artificial Intelligence, Information Retrieval	Aug 2024 - Dec 2025
Tribhuwan University, IOE , Thapathali Engineering Campus B.E. in Electronics and Communication Relevant Coursework: Object Oriented Programming, Databases, Discrete Maths, Data Structures and Algorithms, Operating Systems, Computer Networks, Information Retrieval, Image Processing, Advanced Electronics, Embedded System, Microprocessor	Nov 2014 - Nov 2018

Work Experience

Imark Pvt. Ltd. Kathmandu, Nepal <i>Full Stack Developer</i>	Sep 2021 - Jul 2024
<ul style="list-style-type: none">Built and maintained client-server and SOA-based applications supporting scalable enterprise systems.Developed event-driven microservices with asynchronous communication using Kafka.Designed and implemented REST and SOAP web services following object-oriented design principles.Implemented data access services and persistence layers for distributed backend systems.Contributed to SaaS and PaaS architectures enabling cloud-based deployment and scalability.Performed large-scale data processing and analysis using Hive and Hadoop ETL pipelines.Built backend services using Scala for high-performance data and service workloads.Developed and deployed services using Spring and Spring Boot with clean, modular design.Automated CI/CD pipelines using Jenkins and Kubernetes to streamline build and release workflows.Integrated enterprise systems using Apache Camel for reliable message routing and transformation.Integrated Elasticsearch-based search services to support efficient indexing and low-latency query performance.Utilized Azure Monitor to track application health, analyze logs and metrics, and troubleshoot production issues.Enforced code quality standards using SonarQube across development workflows.	

Danphe Health Inc. Kathmandu, Nepal	May 2019 - Sep 2021
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<i>Software Developer</i>	
<ul style="list-style-type: none">Designed and implemented scalable service-oriented and microservices architectures, enabling loosely coupled, distributed backend systems for enterprise applications.Developed RESTful and SOAP APIs using object-oriented design principles, with well-defined contracts and documentation via Swagger/OpenAPI to support cross-system integration.Built event-driven and asynchronous backend services, supporting low-latency, high-throughput communication in distributed environments.Implemented cloud-native solutions across SaaS and PaaS platforms, supporting scalable deployments, service orchestration, and reliable application delivery.Established CI/CD pipelines to automate builds, testing, and deployments, improving release reliability and reducing manual effort across environments.Improved backend performance and system reliability, contributing to 30–40% performance gains through concurrency optimization, code refactoring, and efficient resource utilization.	

Project Work

- **Brain Tumor Segmentation:** Implemented MRI-based glioma segmentation using U-Net and Attention U-Net, applying preprocessing and augmentation to achieve high IoU for tumor-focused medical imaging.
- **Reinforcement Learning (BaghChal):** Built an AI game agent using Q-Learning, SARSA, and Expected SARSA, optimizing reward design and state space to improve decision accuracy and convergence speed.
- **Semantic Search System:** Developed a hybrid semantic search engine combining BM25 and dense embeddings, implementing vector similarity search and evaluating performance using Precision@K, Recall, MAP, and nDCG.
- **GastroVision (Medical AI):** Built a deep-learning-based endoscopic image classification system, evaluating models with precision, recall, confusion matrix, and AUROC for clinical reliability.
- **LLM-Powered Proteomics Chatbot:** Developed a domain-specific expert chatbot using a .NET backend, Angular frontend, and a locally hosted LLM to deliver accurate, context-aware scientific responses.

Technical Skills

- **Languages:** C#, Java, Python, Scala, SQL, JavaScript, TypeScript
- **Backend & Frameworks:** .NET Core, ASP.NET Core, Web API, Entity Framework, LINQ, Spring, Spring Boot, Hibernate
- **Architecture & Integration:** Microservices, Service-Oriented Architecture (SOA), Event-Driven Architecture, REST, SOAP
- **Cloud & DevOps:** Azure, AWS, Docker, Kubernetes, CI/CD Pipelines, Jenkins, Azure DevOps
- **Messaging & Streaming:** Kafka, RabbitMQ
- **Databases:** SQL Server, PostgreSQL, MongoDB, MySQL, Oracle
- **Testing & Quality:** xUnit, NUnit, TDD, BDD, SonarQube
- **Security:** OAuth 2.0, JWT, Role-Based Access Control, Secure Logging
- **Tools & Platforms:** Git, Maven, IIS, Linux, Postman, Jira, Confluence

Awards and Certificates

- **Star Performer:** Star Performer of the Year 2023 at Imark Pvt. Ltd.