

SAMRAT SHRESTHA

Iowa City, IA 52246

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Education

University of Iowa

Aug 2023 – May 2025

Masters of Science in Computer Science

Iowa City, IA, USA

- Relevant Courses: Algorithms, Distributed Systems and Algorithms, Deep Learning

Experience

IIHR—Hydroscience and Engineering

Aug 2023 – Present

Graduate Research Assistant

Iowa City, IA, USA

- **Lab Research Management System:** Developed a NodeJS, Python, React, and PostgreSQL lab management platform adopted by multiple university labs.
- **Scalable Backend System Design:** Built backend services for real-time data processing, boosting performance by 20%. Developed complex stored procedures in PostgreSQL and integrated them using RESTful APIs with JWT-based role-based authentication for enhanced security.
- **CI/CD Implementation:** Implemented pipelines for research projects, cutting deployment time by 50%.
- **Docker Containerization:** Deployed applications with Docker for consistent environments and efficient pipelines.

IIHR—Hydroscience and Engineering

Feb 2023 – July 2023

Full Stack Developer

Iowa City, IA, USA

- **Data Platform Development:** Built BlueGAP IS, an AI-driven cyber infrastructure for large-scale water quality analytics, nitrogen data processing, and demographic insights, supporting multi-regional sustainability efforts.
- **React Optimization:** Refactored codebases with lazy loading, reducing page load time by 60%.

Cotiviti Nepal

May 2021 – Jan 2023

Software Engineer I

Kathmandu, Nepal

- **Application Security Enhancement:** Integrated Veracode to address vulnerabilities, improving system resilience.
- **Microservices Modernization:** Migrated legacy services to .NET 6 with Clean MediatR architecture for better scalability.
- **Okta Integration:** Strengthened authentication and authorization in .NET microservices.
- **CI/CD Automation:** Streamlined deployments using Bamboo and Octopus for fast and reliable releases.
- **Unit Testing:** Enhanced code reliability by adding NUnit/XUnit test cases.
- **Code Quality Improvement:** Integrated SonarQube for continuous assessment, reducing bugs by 35%.

Crossover Nepal

Nov 2019 – Apr 2021

Junior Software Engineer

Lalitpur, Nepal

- **Full-stack Development:** Contributed to RestaurantPOS and Hospital Management systems using .NET Core, MS SQL, and Angular 10.
- **Performance Optimization:** Improved .NET Core efficiency by optimizing threading and parallel processing.

Projects

- [P1] Media Library Management System: A backend service for managing a digital media library on Spotify, including audio files, metadata, and user-generated playlists, using Python. Integrated Docker for containerized deployments.
- [P2] Audio Seeker: A backend-powered music recognition app capable of identifying unrecognized songs, utilizing Python (Flask), Java, MySQL, and Firebase.
- [P3] Sawari Sewa: Android ride-sharing application developed using Java, Google Maps API, and Firebase.

Technical Skills & Certifications

Languages: JavaScript, Python, Java, TypeScript, HTML, Golang, Excel

Frameworks/Libraries: .NET Core, Redux, React, Flask, LINQ, Node.js, Asynchronous programming, MVC, Hadoop, MVVM, GraphQL, Jest, NEXT.js, Redis, OAuth, OpenID, TensorFlow, NLP, Django, Spring

Architecture/Design: Design Patterns, Microservice Architecture, Distributed Systems, REST APIs, JSON, Webpack

Cloud/DevOps: Docker, Kubernetes, Bamboo, Okta, Veracode, SonarQube, RabbitMQ, Microsoft Azure (Azure Communication Services, Azure Function, Azure AD), AWS (ECS, Lambda, S3, RDS, SNS, SQS, DynamoDB, API Gateway, Aurora), Jenkins, Atlassian Bamboo, Octopus, Kafka

Databases: No SQL, MySQL, PostgreSQL, PostgREST, Firebase, MongoDB, Transaction Management

Soft Skills: Leadership, Problem Solving, Optimization, Agile, SDLC, Dependency Injection, Organizational Skills, Git, Growth Mindset, Test-Driven Development, Automated Testing, Distributed Computing, Distributed Systems, Data Cleaning, Data Visualization, Scrum, Kanban, JIRA, Mobile Web, front-end Troubleshooting, Communication Skills, Team Player, Attention to Detail, Database, Compliance

Certifications: AZ-900: Microsoft Azure Fundamentals, Certified SAFe 5 Practitioner