# Gaurav Kumar Singh

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## Skills

- **Programming Languages:** Java, Python, C, JavaScript, Typescript
- **Databases:** MySQL, MSSQL, PostgreSQL, MongoDB, NoSQL
- **Cloud Computing & DevOps:** AWS (Lambda, CloudFormation, ECS, S3, DynamoDB), CI/CD Pipelines, Git, Docker, Kubernetes
- **Framework:** Spring Boot, Flask, Django, Mockito, unittest, J2EE, Junit
- **Web Technologies:** HTML, CSS, JQuery, Node JS, React
- **Others:** Object-Oriented Programming OOP, Agile, SCRUM, System Design, JSON, IntelliJ IDE, Eclipse IDE, Postman

## Experience

**Software Engineer** **TCS** *Lucknow, India* **02/2022 - 08/2024**

SMB-Soln-eForms - (Small & Medium-sized Business Solutions-Electronic Forms)
*(Java, SpringBoot, JavaScript, AWS, Python, Scikit-Learn, Apache Kafka, MySQL)*

- Designed, developed, and maintained backend solutions for Java e-Forms, seamlessly integrating Java, JavaScript, and AWS services to enhance functionality, particularly in fraud detection capabilities, reducing fraudulent activities by 40%.
- Designed and developed Restful APIs using the Spring framework, reducing data latency by 30% and enhancing efficiency and client experience.
- Implemented Python scripts for data analysis and machine learning algorithms, significantly enhancing fraud detection accuracy by 25%.
- Incorporated JWT-based authentication and authorization for APIs, reinforcing secure data transmission.
- Achieved a 40% reduction in query execution time by converting intricate SQL queries into effective stored procedures in MySQL and applying advanced indexing techniques.
- Utilized ActiveMQ and Apache Camel for efficient data streaming and integration between microservices.
- Analyzed application logs and implemented a caching strategy to cut down response time by 70%, improving overall system performance.
- Performed unit testing (93% coverage), integration testing, and end-to-end testing to ensure reliability and stability.
- Configured and utilized Jenkins pipelines for continuous integration and continuous deployment (CI/CD), streamlining the build, evaluation, and deployment of applications.

AI. Cloud 1.0 - (Cloud Computing) **03/2023 - 08/2024**
*(AWS S3, AWS Lambda, Java, DynamoDB, Amazon ECS)*

- Implemented and optimized cloud-based solutions on AWS, streamlining operations and enhancing scalability.
- Achieved a 25% reduction in operational costs through efficient resource management and optimization techniques.

**Python Developer (Intern)** **CodeSpeedy** *Kolkata, India* **01/2021 - 03/2021**

- Collaborated with a team of developers to contribute to the 'Sentiment Analysis of Customer Reviews' project, employing Python and natural language processing libraries.
- Authored and published tutorials and articles on Python programming.

## Education

**Master of Science** **University at Buffalo, SUNY** *New York, USA* **08/2024 - 06/2026**

- Computer Science & Engineering
  *(Coursework: Artificial Intelligence, Machine Learning, Hardware & Software System)*

## Projects

**Flask Connect Blog** *(Python, Flask, HTML, CSS, Bootstrap, SQL, Heroku)* **(07/2024)**
- Developed a fully functional blog website using Python and Flask, incorporating front-end technologies such as HTML, CSS, and Bootstrap.
- Implemented features including user logins, followers, authentication, SQL database integration, and payment functionality.

**Graph Neural Network** *(Python, Tensorflow, Pytorch, Spektral)* **(10/2023)**
- Implemented GNN+ in TensorFlow and PyTorch with efficient GNNConv and CheegerCutPool for enhanced graph tasks.
- Integrated GNN+ into TensorFlow (Spektral) and PyTorch (PyTorch Geometric) for versatile graph tasks.

**Java-CRUD-Web Application** *(Java, JavaScript, HTML5, CSS, MySQL)* **(02/2022)**
- Designed and developed a Java web application with comprehensive Create, Read, Update, and Delete (CRUD) functionality.
- Implemented JavaScript for responsive user interaction, ensuring a seamless interface in the web application.

**Chicago Crime Rate Prediction** *(Facebook Prophet, Python, Kaggle Chicago Crime Dataset)* **(10/2023)**
- Developed a predictive model using Facebook Prophet for time series forecasting to predict future crime rates in Chicago.
- Implemented streamlined data preprocessing on Kaggle's Chicago Crime Dataset, facilitating seamless crime rate predictions.

## Certifications

- Microsoft Certified: *Azure AI*, *Generative AI* & *Data Analysis*
- Data Structure & Advanced Java: *LinkedIn*