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Implementing a Java Microservice for Credit Fraud Detection Using Machine Learning

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This study investigates the application of the Random Forest algorithm to identify and prevent fraudulent activities in a dynamic and complex financial environment. We aim to generate a fraud detection model and integrate it into a Java-based microservice for practical deployment. The process involves training and validating the model using historical transaction data, serializing the model for integration, and developing a scalable, stateless microservice with RESTful APIs. This microservice can be seamlessly integrated into existing financial systems, leveraging containerization technologies for deployment. By embedding the Random Forest model within a Java microservice, financial institutions can enhance their fraud detection mechanisms, providing robust protection against fraudulent activities and minimizing financial losses.

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