

# Leveraging Machine Learning for Enhanced Customer Experiences in E-Commerce

**Ahana Sen, Anwesa Ghosh, Arna Saha**  
Department of Computer Science & Engineering  
Department of Applied Science & Humanities  
Guru Nanak Institute of Technology, Kolkata, India

**Abstract:** *Machine learning has emerged as a powerful tool, transforming how businesses operate in this dynamic scenery. In the world of ecommerce, personalized recommendations play a crucial role in enhancing user experience and driving sales. The exponential growth of e-commerce has created a demand for cultured techniques to address various industry challenges. E-commerce flourishes on understanding customer behaviour and anticipating their needs. This paper delves into how ML algorithms leverage vast data sets to personalize the customer journey, optimize operations, and combat fraud in e-commerce. It also explores the transformative power of machine learning (ML) in the e-commerce landscape.*

**Keywords:** E-Commerce, Machine learning, Recommendation systems, Fraud detection, Customer behavior etc