Exploratory Data Analysis (EDA) Tutorial Work

Machine learning (ML) professionals navigate a range of legal, social, ethical, and professional challenges that shape responsible AI development and deployment. Key concerns include data privacy and protection, as governed by frameworks such as the General Data Protection Regulation (GDPR), algorithmic fairness and bias mitigation, intellectual property rights over data and models, and accountability in automated decision-making processes (Ferrara, 2024). Understanding dataset applicability further involves addressing issues of data quality, representativeness, and fairness, as these directly influence model performance, bias, and generalisability (Rattanaphan and Briassouli, 2024). Applying ML techniques to real-world problems requires not only technical competence but also critical appraisal of model assumptions, uncertainty management, and evaluation of potential risks (Tamascelli et al., 2024). Additionally, effective participation in virtual development teams demands collaboration, clear communication, and adaptability — skills essential for project coordination and ethical alignment (Uren & Edwards, 2023)). By integrating professional integrity and ethical awareness, ML practitioners ensure that technological innovation remains trustworthy, socially beneficial, and aligned with global AI ethics principles.

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