CONCEPT

Machine Learning for Non-Technical Managers: Understanding and Overseeing ML Projects

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Technical depth: Conceptual · **Practical mode:** Case study

Introduction

Managers are increasingly asked to sponsor, fund or approve machine learning projects without the vocabulary to judge them. Proposals arrive with accuracy claims, data requirements and vendor promises that are hard to test, and projects stall when business goals, data and model results are never connected. This coreconcept course equips non-technical managers to understand how machine learning works, frame problems it can solve and question its results and risks, without writing code. Participants work through cross-sector case material and leave with a Machine Learning Use Case Brief for their own area.

Course Objectives

- Explain fundamental machine learning concepts and learning types accurately enough to brief colleagues and judge proposals
- Distinguish problems suited to machine learning from those better solved by rules, analytics or process change
- Frame an ML project using CRISP-DM and the Machine Learning Canvas, with clear business success criteria
- Interpret model evaluation results, including confusion matrices, precision, recall and error metrics, in business terms
- Question data quality, bias, drift and explainability risks using ISO/IEC 23894 and the NIST AI RMF
- Produce a Machine Learning Use Case Brief ready to present to a data team or sponsor

Target Audience

- Managers of business units where machine learning projects are proposed or under way
- Project and programme managers coordinating work with data science teams or vendors
- Product and service managers who define requirements for predictive or automated features
- Operations and finance managers approving investment in analytics and ML solutions
- Risk, audit and compliance managers who need to question model-based decisions
- HR and customer function managers whose decisions increasingly rely on model outputs

Course Outline

Day 1: What Machine Learning Is and Where It Adds Value

- ISO/IEC 22989 Terminology: AI, Machine Learning, Models and Training Data
- Supervised, Unsupervised and Reinforcement Learning Explained Through Business Examples
- Machine Learning Versus Rules-Based Automation Decision Tree
- Sector Use Case Scan: Forecasting, Classification, Recommendation and Anomaly Detection
- ML Opportunity Readiness Checklist for a Business Unit

Day 2: Frameworks and the ML Life Cycle

- CRISP-DM Six-Phase Process for ML Projects
- ISO/IEC 23053 Framework for ML-Based AI Systems
- ISO/IEC 5338 AI System Life Cycle Processes
- Machine Learning Canvas for Problem Framing
- MLOps Operating Model: Deployment, Monitoring and Retraining

Day 3: Judging ML Work and Results

- Training, Validation and Test Split Logic and Overfitting Warning Signs
- Confusion Matrix, Precision and Recall for Business Decisions
- MAE and RMSE Error Metrics Interpreted in Business Units
- Datasheets for Datasets and Data Quality Questions for Data Teams
- Model Cards as a Review Artefact for Managers

Day 4: Risk, Failure Modes and Oversight

- Bias and Fairness Metric Review for Customer and Employee Decisions
- Data Drift and Model Degradation Monitoring Dashboards
- SHAP and Feature Importance Outputs Read by Non-Specialists
- NIST AI RMF and ISO/IEC 23894 Risk Questions for ML Projects
- Decision Thresholds, Cost-Sensitive Trade-Offs and Human Review Rules

Day 5: Case Work and the Machine Learning Use Case Brief

- Customer Churn Prediction Case Study: Reading a Vendor's Results
- Predictive Maintenance Case Study: Cost of False Alarms and Missed Failures
- Value Estimate and Success Metric Definition for an Own Use Case
- Machine Learning Use Case Brief Drafting
- Peer Review Panel and Brief Defence

Skills You Will Gain

- Machine Learning Literacy
- Analytical Problem Framing
- Model Performance Interpretation
- Data Quality Assessment
- Algorithmic Bias Awareness
- ML Life Cycle Oversight
- AI Business Case Development

Why Attend This Course

- Return with a Machine Learning Use Case Brief for a real opportunity in your area, already challenged by peers
- Hold specific, confident conversations with data scientists and vendors without needing to code
- Spot inflated accuracy claims and missing monitoring plans before they become costly commitments
- Learn from managers in banking, manufacturing, healthcare and government who oversee similar projects

Conclusion

Machine learning adds value only when the people who own the business problem can frame it clearly and judge the evidence behind a model. This course moves from fundamental concepts and learning types, through the CRISP-DM process and the international life cycle standards, to reading evaluation results and questioning bias, drift and explainability. The final day applies that understanding to case studies and a Machine Learning Use Case Brief, giving participants a structured way to start, steer and review the next machine learning initiative in their area.