

AI Solution Product Management Course Complete Syllabus

Section 1 - AI for Product Managers

Lesson 1 - The need for AI Product Managers

1. Driving Factors of AI
2. AI Leadership Shortage
3. Why do we need AIPMs?
4. Will AI take away human jobs?

Lesson 2 - Business objectives in the AI era

1. Gaps Between Domains in AI Adaptation and Adoption
2. Henry Mintzberg's Strategic Change
3. Cognification In Every Business Aspect
4. Henry Mintzberg's 5 Ps of Strategy
5. Your Company's AI Phase
6. The Right to Grow
7. Earning the Right for Cognification
8. Pitfalls During Cognification
9. Plan for McKinsey's Three Horizons of Growth
10. Example case - Objective Difference in CC Fraud Detection Solution
11. Understanding Customer's Next Action
12. Cognified Business Lifecycle

Lesson 3 - AI know-how for Product Managers

1. History Of AI
2. AI Fundamentals
 - a. Glossary: AI, ANI, AGI, ASI, ML
 - b. Machine Learning Approach
 - c. The AI Timeline
 - d. What Can We Expect From AI?

- e. AI, ML, RL, DL Relation
 - f. Application Level AI Categories
 - g. Computer Vision
 - h. Common Technology Aspects of AI Solutions
3. AI Strategy
 4. AI Data Strategy
 - a. Data Acquisition
 - b. External Data Acquisition
 - c. Internal Data Acquisition
 - d. Labeling aka. Annotations
 - e. Data Quality
 - f. Data Augmentation; Improve Diversity and Amount
 5. Algorithm Strategy
 - a. Supervised Learning Algorithm
 - b. Simplified Regression Analysis
 - c. Active Learning Algorithms
 - d. Unsupervised Learning Algorithms
 - e. Reinforcement Learning Algorithms (RL)
 6. ML Framework Strategy
 - a. Why Use ML Frameworks?
 - b. ML Framework trade-off-matrix
 7. Platform & Infrastructure Strategy
 8. Capability Management In Business
 9. Platform and Infrastructure Capabilities

Lesson 4 - Possible AI opportunities

1. AI In Businesses
 - a. AI In Product Business
 - b. AI In Service Business
 - c. In-house AI Usage
2. AI Solution Landscape
3. AlaaS - Amazon AWS Machine Learning
4. AlaaS - Google Cloud AI
5. Common Cloud AI Solution Layers
6. AlaaS - IBM Watson
7. AlaaS - Microsoft Azure
8. Product or Service?
9. Democratizing Luxury Car Experience
10. AI Is Changing Product & Services

Section 2 - Agile AI Product Lifecycle

Lesson 1 - Agile AI Product Lifecycle and other methodologies

1. Common Methodologies & Frameworks
2. AI Opportunities
3. Agile Manifesto
4. 12 Principles of Agile Manifesto
5. Agile AI Product Lifecycle Deliverables
6. Two Example Use Cases to Apply Learnings

Lesson 2 - Design Sprint

1. Design Sprint by Google Ventures
2. Why Design Sprint In AI Lifecycle?
3. Design Sprint 1.0 Roadmap
4. Design Sprint 2.0 Roadmap
5. Design Sprint Team
6. Monday - Problem Day
 - a. Example case - Map of News App
7. Tuesday - Sketch Day
 - a. Blue Ocean Strategy's Buyer Utility Map
 - b. Example case - News App Buyer Utility Map
 - c. Blue Ocean Strategy's The Four Actions Framework
 - d. Example case - Value Drivers for News App
 - e. Example case - Example Sketch for News App
8. Wednesday - Decision Day
 - a. Planning and Managing is Key
9. Thursday - Prototyping Day
 - a. Advantage of Early Validation
10. Friday - Interview Day

Lesson 3 - AI business requirements and data analysis

1. Requirement Analysis is Different in AI Projects
2. Customer Aspect
3. Solution Aspect
4. Business Aspect
5. AI Requirement Analysis Framework
6. See - Gather Information

- a. Example case - News App Current and Ideal States
- 7. Study - Understand
 - a. Functional Requirements
 - b. Example case - Functional Requirements of News App
 - c. Example case - Data Requirements of News App
 - d. Non-functional Requirements (NFR)
 - e. Example case - NFRs of News App
 - f. Organizational requirements
 - g. Compliance and Regulation Examples
 - h. Trade-off Matrix for Organizational AI Requirements
- 8. Structure - Organize
 - a. Prioritization in AI Projects
 - b. Strategy-first Approach
 - c. The AI Value-add
 - d. Prioritizing by Value-add

Lesson 4 - Building AI solution teams

1. AI Related Roles
2. Essential AI Related Roles and Responsibilities
3. C-level Executive Skills
4. AI Product Leadership Focus
5. Software Architect
6. AI Architect
7. Skills for Data Scientist vs. Data Engineer
8. Production Team Strategies

Lesson 5 - Researching AI solutions

1. The Need for AI Solution Research
2. AI Solution Research Do's and Don'ts
3. AI Solution Research Lifecycle
4. Example case - Value Drivers for News App
5. Example case - Data Scientist's Work
6. Example case - Prioritizing Data Science Work
7. Types of ML Data
 - a. Example case - Data for Inferred Interest Value Driver
 - b. Enterprise Data Annotation
 - c. Need for Labeled Data - Natural Language Processing (NLP)
8. NFRs Applying to all Layers
9. ML Algorithms
10. ML Frameworks
 - a. ML Framework Contributor Count Change

- b. ML Framework Questions
 - c. Remarkable Scalability w/ TF Distributed Training
 - d. Example: Supervised Learning
11. Rent vs. Buy vs. Build vs. Acquire
- a. Evaluating SaaS Platforms
 - b. Need for AI HW Accelerators
 - c. AI GPU-accelerators
 - d. Solutions: GPGPU - General Purpose GPU
 - e. Rent vs. Buy vs. Build AI Decision
 - f. CapEx vs. OpEx Trade-off
 - g. Example case - Solution Proposal from Data Scientist
 - h. Example case - Image Recognition Rent vs. Buy vs. Build Exercise

Lesson 6 - Rapid AI experimentation

1. Why Rapid Experimentation?
2. AI Solution Space
3. Rapid ML Experimentation Lifecycle (REL)
4. Example case - Data Strategy for ETL Exercise
5. Rapid ML Experimentation Example (Supervised)
6. Iterative Approach
7. ML Experiment Management Tools
8. Rapid ML Experimentation Lifecycle (REL)
 - a. ETL Phase Tips
 - b. Build Phase Tips
 - c. ML Training Phase Tips
 - d. Evaluation Phase Tips
9. Data Scientist's Work
10. Example case - ML Model Scoring/Inferencing Specs

Lesson 7 - Building and releasing AI solutions

1. Build & Release Prerequisites
2. Test Levels for AI Solutions
3. Focus Areas For AI Leaders
4. People
 - a. Ensure Interaction
5. Solutions
 - a. Build the Right Thing
 - b. Customer Profiling
6. Practices
 - a. Build the Thing Right
 - b. AI Opportunities

7. Environment
 - a. Risk Management Framework
 - b. ISO 31000
 - c. Example case - In-camera News Notification - Risk Management
 - d. Areas of AI Risk
 - e. Adversarial Examples
 - f. Adversarial Examples Solutions
 - g. Black Box AI Problems
 - h. Black Box AI Solutions
 - i. ML Model Security Issues
 - j. Protecting ML Models
 - k. AGI/ASI Existential Risk
 - l. Scope of Experiments
 - m. Safe AI Strategy
8. Partnerships
9. Example case - On-prem Content Recommendation System
10. Example case - Software Architecture (SaaS Alternative 1)
11. Example case - Software Architecture (SaaS Alternative 2)

Lesson 8 - Evaluating and experimenting

1. Metrics In AI Solutions
2. S.M.A.R.T criteria
3. KPI Lifecycle
 - a. Identify Metrics
 - b. Process to Identify KPIs
 - c. Create Metrics
4. Experimentation for Empirical Evidence
5. Experimentation Lifecycle
 - a. Experiment hypothesis
6. Example case - Hypothesis Exercise
7. Experimentation Techniques
 - a. A/B testing
 - b. Multivariate Testing
 - c. Multi-armed Bandit Testing
 - d. Sequential Hypothesis Testing
 - e. Experimentation Technique Trade-off
8. Experiment Setup
9. Example case - Optimizely - A/B Test
10. Example case - Optimizely - Variations
11. Example case - Experiment for News App

Lesson 9 - AI Product Manager responsibilities

1. AI Product Leader Lessons
2. Core Skills - Product
3. Core Skills - Balance
4. Core Skills - Interaction
5. Requirements Trade-off Matrix
6. AI Product Leader Skills

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