AI for Tax
Learning Outcomes

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Module 1: Introduction to AI and Machine Learning in Tax

- Understand the basic concepts and history of artificial intelligence (AI) and core principles of machine learning, including supervised and unsupervised learning.
- Understand the role of natural language processing (NLP) in AI and its relevance to tax applications.
- Learn how AI is helping agencies automatically classify electronic invoices and detect network anomalies in taxation.
- Learn how AI is helping organisations enforce tax compliance.
- Evaluate potential AI use cases in tax workflows.

Module 2: Generative AI and Large Language Models (LLMs)

- Define generative AI and explain the significance of large language models (LLMs) in the AI landscape.
- Understand how LLMs like GPT-4 operate, including key concepts like tokenisation, transformers, attention and fine-tuning.
- Explore ChatGPT's capabilities in semantic search and generative compliance.
- Understand how techniques like keyword and semantic search are used to extract information from tax documents.
- Learn how natural language processing (NLP) and machine learning (ML) are used to extract and analyse key information from knowledge sources.
- Learn how Q&A systems are being used to retrieve information from knowledge sources and provide more accurate responses to user queries.
- Understand how LLMs can be used to extract required information and automatically fill tax-related forms.
- Understand the role of LLMs in converting and processing various data types.
- Explore ChatGPT's capabilities in multi-modal data processing.

Module 3: Ethical, Legal, and Privacy Considerations

- Explain the concept of bias in AI models, its implications in tax contexts, and strategies to mitigate its impact.
- Identify ethical implications of AI in tax, including issues of bias, fairness, and transparency.
- Analyse case studies where AI bias has impacted tax decisions and propose solutions to mitigate such risks.
- Understand the legal frameworks governing AI use, including GDPR, the Equality Act, and other data protection laws.
- Assess the legal risks and responsibilities when implementing AI and GenAI technologies in the tax domain.
- Recognise the privacy concerns associated with using AI tools in tax practice.

Module 4: Implementing AI in Tax Workflows

- Develop best practices for collaborating with AI vendors and contractors, including effective communication and project management.
- Draft product requirement documents (PRDs) and request for proposals (RFPs) with AI integration in mind.
- Understand the importance of LLMOps, including data annotation, feedback loops, and monitoring in AI-driven projects.
- Follow a checklist to draft an RFP for automating tax compliance and for an AI-based tax filing assistant.
- Improve productivity by applying prompt engineering techniques to interact effectively with LLMs.
- Integrate AI tools into daily tax workflows to enhance efficiency and decision-making.
- Use basic and advanced prompt engineering techniques to create effective prompts for tax-related queries.

Module 5: Risks, Challenges, and Future Trends

- Identify the key risks and challenges associated with implementing AI in tax such as hallucinations, accuracy, and reliability issues.
- Evaluate the performance of AI tools using appropriate metrics such as accuracy, precision, recall, and F1 scores.
- Analyse case studies of AI implementation failures in tax to learn from past mistakes.
- Predict emerging trends in AI and their potential impact on the tax industry.
- Discuss the evolving role of tax professionals in the context of increasing AI adoption in the field.