Training Course on Implementing and Evaluating AI-Powered Library Services

Professional Development Training Course Outline

Category	Library Institute	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The landscape of modern libraries is undergoing a profound transformation, driven by the rapid advancements in **Artificial Intelligence (AI)** and **Machine Learning (ML)**. This course provides a comprehensive introduction to leveraging AI for enhanced library operations, empowering library professionals to design, implement, and critically evaluate **AI-powered solutions**. From intelligent **resource discovery** and **automated cataloging** to **personalized user experiences** and **data-driven decision-making**, understanding AI is no longer optional but essential for future-proofing library services in the **digital age**.

Training Course on Implementing and Evaluating AI-Powered Library Services equips librarians with the practical skills and strategic insights needed to navigate the complexities of **AI integration** in their institutions. Participants will explore the ethical implications of AI, master **prompt engineering** for generative AI tools, and develop robust methodologies for assessing the impact and effectiveness of new technologies. By fostering **AI literacy** and practical application, this course aims to cultivate a new generation of innovative library leaders capable of harnessing AI to deliver truly transformative and **user-centric services**.

Programme Curriculum

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Course Duration

10 days

Course Objectives

1. Understand the core concepts of **Artificial Intelligence (AI)**, **Machine Learning (ML)**, **Deep Learning**, and **Natural Language Processing (NLP)** relevant to library contexts.
2. Identify opportunities for **AI-driven innovation** across various library functions, including **collection development**, **resource management**, and **digital preservation**.
3. Implement AI tools for **semantic search**, **personalized recommendations**, and **intelligent information retrieval** to improve user access to information.
4. Apply AI for **automated metadata creation**, **smart cataloging**, and **workflow optimization** to increase operational efficiency.
5. Design and deploy **AI chatbots**, **virtual assistants**, and other **conversational AI** applications for 24/7 user support.
6. Learn advanced **prompting techniques** for **generative AI** tools to create high-quality content and automate information summaries.
7. Critically assess **AI solutions**, **AI ethics**, **data privacy**, and **algorithmic bias** when selecting and implementing new technologies.
8. Utilize **AI analytics** and **predictive modeling** to inform collection development, service planning, and resource allocation.
9. Promote **AI fluency** among library staff and patrons, enabling responsible and effective engagement with AI technologies.
10. Develop strategies for **AI project management**, from pilot initiatives to full-scale deployment and continuous improvement.
11. Navigate the complex **ethical frameworks**, **data governance**, and **intellectual property** issues associated with AI in libraries.
12. Anticipate emerging **AI trends**, **metaverse applications**, and the evolving role of librarians in an AI-powered future.
13. Lead **organizational change** and advocate for the adoption of **cutting-edge technologies** to enhance library value and relevance.

Organizational Benefits

- Automate repetitive tasks, reducing manual workload and freeing up staff for high-value activities.
- Provide personalized, intelligent, and round-the-clock services, leading to higher patron satisfaction and engagement.
- Facilitate more accurate and relevant access to library collections, maximizing the utility of information resources.

- Leverage AI-powered insights for informed decisions on collection development, service offerings, and resource allocation.
- Equip staff with essential skills for navigating the evolving technological landscape, ensuring the library remains a vital community hub.
- Position the library as an innovative leader in information services, attracting new users and retaining existing ones.
- Optimize processes and resource allocation through AI-driven efficiencies, leading to potential long-term cost reductions.
- Enable the library to handle increasing demand for services without proportional increases in staff.

Target Audience

1. Librarians and Information Professionals
2. Library Directors and Administrators
3. IT Professionals in Library Settings
4. Metadata and Cataloging Specialists
5. Reference and User Services Librarians
6. Digital Scholarship and Scholarly Communication Librarians
7. Library and Information Science (LIS) Students and Faculty
8. Anyone interested in the intersection of AI and library services.

Course Outline

Module 1: Foundations of AI and Machine Learning for Libraries

- Understanding core AI concepts: Narrow AI vs. General AI, Symbolic AI vs. Connectionist AI.
- Introduction to Machine Learning (ML), Deep Learning, and Neural Networks.
- Key AI disciplines: NLP, Computer Vision, Robotics, and their relevance to libraries.
- Historical overview and current state of AI in the information landscape.
- **Case Study:** The evolution of search engines from keyword matching to AI-powered semantic search, illustrating the impact on library discovery.

Module 2: Natural Language Processing (NLP) in Action

- Fundamentals of NLP: Tokenization, sentiment analysis, named entity recognition.
- Applications of NLP in libraries: text summarization, content indexing, knowledge extraction.
- Leveraging NLP for improved bibliographic control and metadata enrichment.
- Introduction to Large Language Models (LLMs) and their capabilities.
- **Case Study:** How a university library uses NLP to analyze research papers and identify trending topics for collection development.

Module 3: AI for Enhanced Resource Discovery & Recommendation Systems

- Moving beyond traditional search: Semantic search, faceted search, and federated search.
- Principles of recommendation engines: Collaborative filtering, content-based filtering.
- Designing personalized user experiences through AI-driven recommendations.
- Implementing AI for cross-platform discovery and seamless resource access.
- **Case Study:** Netflix-style recommendations for library patrons based on borrowing history and user preferences, increasing engagement.

Module 4: Automating Cataloging and Metadata with AI

- Challenges of traditional cataloging and the need for automation.
- AI-powered tools for automated metadata generation and record enrichment.
- Utilizing computer vision for object recognition in digital collections.
- Integrating AI with existing Library Management Systems (LMS).
- **Case Study:** A national library piloting AI to automatically generate MARC records for newly digitized archival materials, reducing processing time.

Module 5: AI-Powered User Services: Chatbots & Virtual Assistants

- The rise of conversational AI in customer service and its library applications.
- Designing and deploying library chatbots for FAQ resolution and basic queries.
- Developing virtual assistants for guided tours, research assistance, and policy explanations.
- Best practices for training AI models for natural language understanding and response generation.
- **Case Study:** A public library implementing a 24/7 chatbot to answer common questions, improving user satisfaction and reducing staff workload.

Module 6: Generative AI and Content Creation

- Understanding the capabilities and limitations of generative AI models (text, image, audio).
- Practical applications for librarians: generating summaries, creating promotional content, drafting research outlines.
- Advanced prompt engineering techniques for optimal generative AI outputs.
- Ethical considerations in AI-generated content: originality, bias, and deepfakes.
- **Case Study:** A special library using generative AI to create concise summaries of complex technical reports for easier patron consumption.

Module 7: AI Ethics, Bias, and Data Privacy

- Identifying and mitigating algorithmic bias in AI systems.
- Ensuring fairness, transparency, and accountability in AI deployment.
- Data privacy considerations: GDPR, CCPA, and best practices for protecting patron data.
- The "black box" problem and the importance of explainable AI (XAI).
- **Case Study:** A library facing a challenge due to biased recommendations from an AI system and the steps taken to identify and rectify the issue.

Module 8: Evaluating AI Solutions and Impact Assessment

- Developing criteria for evaluating AI tools: accuracy, reliability, scalability, cost-effectiveness.
- Quantitative and qualitative methods for assessing the impact of AI on library services.
- Measuring user satisfaction, efficiency gains, and return on investment (ROI) of AI initiatives.
- Formulating metrics and KPIs for continuous improvement of AI-powered services.
- **Case Study:** A university library conducting a pre/post-implementation study to measure the impact of an AI-driven discovery system on student research habits.

Module 9: AI in Digital Preservation & Archiving

- Utilizing AI for large-scale digitization and optical character recognition (OCR) enhancement.

- Applying machine learning for anomaly detection in digital archives and long-term preservation.
- AI for content analysis and metadata extraction from born-digital materials.
- Challenges and opportunities for AI in preserving cultural heritage.
- **Case Study:** An archival institution using AI to automatically identify and classify historical images, making them more searchable and accessible.

Module 10: AI for Collection Development & Management

- Predictive analytics for anticipating user demand and optimizing collection acquisitions.
- AI-driven insights into usage patterns, trending topics, and collection gaps.
- Automated weeding and deselecting of less relevant materials.
- Leveraging AI to identify diverse and inclusive content for collections.
- **Case Study:** A library using AI to analyze borrowing data and external trends to make data-informed decisions about purchasing new e-books and journals.

Module 11: AI and Information Literacy Instruction

- Integrating AI tools into information literacy curricula.
- Teaching critical evaluation of AI-generated information and sources.
- Addressing misinformation and disinformation in the age of AI.
- Developing AI literacy skills for patrons to navigate emerging technologies responsibly.
- **Case Study:** A library designing workshops for students on how to ethically and effectively use generative AI for research and academic writing.

Module 12: Project Management for AI Implementation

- Planning an AI project: needs assessment, feasibility study, goal setting.
- Choosing the right AI technology stack and vendor partnerships.
- Developing an implementation roadmap and managing project timelines.
- Change management strategies for successful AI adoption within the library.
- **Case Study:** A small public library successfully implementing an AI-powered self-checkout system through careful planning and staff training.

Module 13: The Future of AI in Libraries & Emerging Trends

- Exploring cutting-edge AI research and its potential impact on libraries.
- Discussions on **AI in the metaverse**, **Web3 technologies**, and their implications for library services.
- The evolving role of the librarian in an AI-augmented environment.
- Anticipating societal and technological shifts driven by AI.
- **Case Study:** Visionary discussions on how future libraries might leverage advanced AI for immersive learning environments or hyper-personalized research assistants.

Module 14: Practical AI Tools & Hands-on Application

- Introduction to popular AI platforms and tools relevant to library tasks (e.g., Google AI, OpenAI APIs, open-source AI libraries).
- Hands-on exercises in using AI tools for specific library functions (e.g., text classification, image tagging).
- Building simple AI models or customizing existing ones (no coding required).
- Troubleshooting common issues and optimizing AI performance.

- **Case Study:** Participants engaging in a practical session to use an open-source AI tool to categorize a sample dataset of library materials.

Module 15: Developing an AI Strategy for Your Library

- Formulating a comprehensive AI strategy aligned with the library's mission and goals.
- Identifying key stakeholders and building internal AI champions.
- Creating a roadmap for phased AI adoption and continuous improvement.
- Developing a framework for ongoing AI literacy and professional development for staff.
- **Case Study:** Participants working in groups to develop a preliminary AI strategy for their hypothetical or actual library, presenting their proposed initiatives.

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us pr

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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