Syllabus and Curriculum Design Optimizer Using IBM Cloud and IBM Granite

The Syllabus and Curriculum Design Optimizer is an AI-driven framework designed to enhance the academic planning process in educational institutions. It leverages IBM Cloud services for scalability and deployment, and IBM Granite Foundation Models for advanced natural language processing. The system is capable of analyzing existing syllabi, identifying outdated components, and suggesting modifications aligned with current industry standards and educational best practices.

At the heart of the optimizer lies the IBM Granite NLP model, which understands and interprets syllabus content, extracts key learning outcomes, and maps them to emerging skills in the global job market. Using IBM Watson Discovery and Data Fabric, the tool gathers insights from academic repositories, technical blogs, and professional job boards to ensure that curriculum recommendations are timely and relevant.

The platform architecture includes cloud-based microservices built on IBM Cloud Functions, enabling efficient curriculum evaluation and generation. Educators interact through a user-friendly dashboard powered by IBM App Connect, where they can visualize curriculum gaps, receive AI suggestions, and download revised syllabus structures. Feedback from educators and students is stored in IBM Cloudant, enabling continuous improvement of the AI models.

This solution significantly reduces manual effort in curriculum design while improving alignment with professional skill requirements. By automating curriculum optimization with IBM’s enterprise AI capabilities, this project empowers educational institutions to keep pace with evolving knowledge landscapes and better prepare students for the future workforce.