

**Overview:** Eduworks has provided consulting, design, software development, and related services to the learning, training and education industries since 2001. Eduworks core capabilities include **competency management, training and educational technology, natural language processing, text mining, machine learning, document analysis, content conversion, and interoperability standards**. Eduworks enhances the NLET team with leading-edge technology for competency management and data mining, a deep and broad knowledge of technology used for learning and development, hard-to-find expertise in relevant technical standards, and a world-class “Silicon Forest” software development team.

## **Relevant Solutions:**

- **Competency and Job Management:** Eduworks has developed a system that manages jobs, employees and competencies as separate but related entities and that maps employees to jobs based on competencies and associated documentation. This cloud-based system grew out of an earlier research project sponsored by the U.S. Advanced Distributed Learning (ADL) initiative and relies on text mining and machine learning in essential ways. Originally intended to manage staffing risk in the oil and gas industry, it has also proven effective for matching jobs and résumés. This system can handle millions of records, e.g. the Manpower database of resumes and job postings.
- **Competency Modeling and Tagging:** Eduworks is funded by the ADL to develop a comprehensive “content curation service” for adaptive learning systems. The Eduworks system will label content with competencies and includes a competency management system for which Eduworks and the ADL have researched existing standards used around the globe and in organizations involved in education, training, and HR. Eduworks and the ADL are in the process of creating a standardized model based on this research, which Eduworks will implement.
- **Educational Data Mining:** Eduworks has developed a system that can analyze course content, auto-generate a list of underlying topics, auto-detect the pre-requisite relationships among those topics, and identify paragraphs in the content that address each topic. This is being used to transform didactic content into interactive, conversational intelligent tutoring systems but is equally applicable to identifying coverage gaps in existing curricula based on competency taxonomies.

**Commercial Customers:** Eduworks recent customers include Walgreen, Delta Airlines, Wolters-Kluwer, Wipro LTD, Investors in People (Scotland) and Career Education Corporation. Past customers include dozens of companies and organizations ranging from the Andrew W. Mellon Foundation and University of Wisconsin System to Adobe, Thomson NETg, GeoLearning, P&G, Lockheed Martin, QuestionMark, Ameren, the Army Training Support Center and the Texas Commission on Law Enforcement Officer Standards Education. Eduworks-UK is a recently established company that is marketing Eduworks solutions for content conversion, training needs analysis, recruitment, and related areas.

**Sponsored Research:** Eduworks is currently engaged in research and development projects funded by the National Science Foundation, U.S. Advanced Distributed Learning initiative and the Army Research Laboratory. These are resulting in software for content curation, personalized learning and intelligent tutoring systems. This software is open source or freely available for non-commercial use. Past projects have included development of an open source out-of-the-box digital repository with instructional design support and a competency and training record management system.

**Eduworks Team:** Eduworks leadership has extensive experience in learning and development, educational technology, and competency-based approaches to education and training. Eduworks staff has contributed extensively to the development of multiple interoperability standards including metadata standards for and standards for managing competencies. The Eduworks engineering team includes proficient software engineers with a thorough knowledge of educational and training

technologies and expertise in a wide variety of platforms and programming languages. The staff at Eduworks has designed highly successful user interface and user experiences for companies such as Disney and Brøderbund as well as for small companies, e.g. in behavioral health and pharmacist training.

Technology Stack: The technology stack used by Eduworks includes Java™, Linux™, REST web services, SQL and NoSQL databases, and specialized data structures designed to improve performance. Most of Eduworks capabilities can be accessed via the Cloud through an Eduworks platform called LEVR that developers use to write application-specific web services. Typical such web services return auto-generated learning object metadata for a document or matching scores between course content and a list of competencies. The underlying data manipulated by LEVR can reside in a database or an enterprise content management system.

Contracting: Eduworks is a Defense Contractor Auditing Agency (DCAA) audited company that has successfully executed on multiple private and public contracts.