Building AI Skills and Exploring AI

Artificial intelligence is becoming integral to both society and libraries, shaping how we support research and learning as well as how we provide services and manage operations. At the UCR Library, we are taking a leadership role in building AI capacity that meets the evolving needs of our campus community. We are teaching and collaborating with students and faculty on both the ethical and effective use of generative AI through workshops, instruction, and tool development while also applying AI tools in our cataloging and metadata work. To further advance this effort, the Library initiated a search this year for AI Research Librarians in the Research Services Department and an Educational Technologist in the Teaching and Learning Department, reflecting our commitment to expanding AI expertise. Together, these initiatives are strengthening services and ensuring the UCR Library remains at the forefront of AI at UCR.

Research Services Department

During fall 2024, the UCR Library presented AI Literacy workshops introducing students and faculty to generative AI for academic research, benchmarking various models against graduate-level disciplines. Spring 2025 workshops examined leading-edge AI deep research and reasoning models, exploring research possibilities with AI models while addressing challenges like model hallucination and mitigation strategies.

The Library's Geospatial Services unit organized a spring colloquium on integrating AI with ArcGIS and Planet Imagery geospatial data. UCR PhD candidates presented their AI research for California's billion-dollar agricultural industry, demonstrating early detection systems for crop diseases to prevent blight spread and AI-powered GIS monitoring of moisture levels in agricultural and recreational landscapes. The UCR Library's Creat'R and Robotics Labs hosted a successful robotics summer camp in 2025, integrating AI methods by teaching students to train robot neural networks. Participants built robot cars using convolutional neural networks to recognize green, yellow, and red colors, combining hands-on robotics with practical AI applications.

Textual analysis and subject clustering workshops introduced faculty to AI-powered qualitative text analysis, helping researchers extract insights from large sets of textual data using artificial intelligence methods for ground up categorization and taxonomy development with new Digital Scholarship Librarian, Dr. Jing Han. To expand research support capabilities, the Library completed a search for a research data scientist to assist faculty and students with research data analysis.

This position will provide expertise in data visualization, data management, and facilitate AI-related workshops in the upcoming year.

These initiatives demonstrate the UCR Library's comprehensive and interdisciplinary approach to AI integration across disciplines, from foundational AI literacy to advanced AI research applications in agriculture, engineering robotics, geospatial analysis, humanities and social sciences textual research. The programs successfully bridge theoretical knowledge with practical implementation, preparing the larger university community for AI-enhanced research methodologies.

Teaching and Learning Department

As higher education grapples with the implications of AI for both our mission to prepare students for their future professional and personal success, while maintaining high standards of rigor and academic integrity, librarians are leveraging their expertise in teaching critical, ethical, and effective use of information. In partnership with XCITE, this includes organizing a workshop series, *AI TeachTalks*, for instructor development in using AI as a tool for their teaching work, developing metacognition in students, and thoughtful integration of AI into lesson plans. In fall 2025, the Library will launch an AI Literacy course in Canvas that reflects the needs we have heard from our instructors and students in these conversations.

Supporting student development of AI literacy has also been incorporated into the suite of information literacies the Library develops through instruction

and programming, alongside media, data, primary source, digital, and visual literacies. With the integration of AI-powered tools and methods becoming an important part of research, we have worked closely with undergraduate research programs across several schools and colleges to introduce the foundations of AI to these emerging researchers. Carrie Cruce, along with former colleague Kat Koziar, has developed a two-part workshop, *AI for the Rest of Us*, which provides a deep dive into the fundamentals of generative AI, so that students can make their own informed decisions about the use of AI for their professional and academic needs. Early adopters on campus include TRIO, McNair Scholars, and the Highlander Early Start Academy, with plans for additional instruction in AI foundations for research in development.

Acquisitions, Description, and Discovery Department

Metadata creation for the description of bibliographic resources is widely considered an area that could benefit from the implementation of generative AI tools. One of the difficulties in implementing AI for cataloging and metadata creation is the combination of multiple sets of instructions that metadata creators use to structure their data with human judgment and interpretation.

Sompratana Creighton, a UCR Library Metadata Cataloger, has been exploring the viability of AI tools for very specific metadata tasks. She has evaluated several tools designed to convert Thai script into Roman characters, assessing how well they perform in three key areas: diacritic accuracy, word segmentation, and compliance with ALA-LC (American Library Association – Library of Congress) Romanization standards.

Transliteration represents words written in one script in the script used by another language to facilitate pronunciation of those words by speakers who do not read the original script. The most promising AI transliteration tool developed so far for Thai script was produced by a Thai academic institution.

Sompratana has also investigated AI tools used to generate Library of Congress Subject Headings and call numbers, using unique Thai-language content as her testing material. Focused applications of generative AI such as these use cases are a more likely route to successful implementation than training an AI tool on the available corpus of bibliographic data, which tends to be of variable quality and has been produced over time using a range of changing standards, and expecting the tool to produce full, standards-compliant metadata records.