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THE UNIVERSITY OF ARIZONA



RESEARCH, INNOVATION & IMPACT  
**Data Science Institute**

## The Data Drip

A DIGEST OF DATA SCIENCE NEWS AT THE UNIVERSITY OF ARIZONA



### DATA SCIENCE INSTITUTE

#### Pilot chats with AI-VERDE

Large Language Models (LLMs), such as ChatGPT, Gemini, and Llama, have enabled innovative applications for coursework and research endeavors. However, free versions of these models impose daily usage limitations and lack access to Application Programming Interfaces (APIs), essential for developing customized applications and automating processes. Managing individual subscriptions and budgets for students within a course or a research team can be a substantial burden.

The Data Science Institute (DSI) team has been busy this summer developing "AI-VERDE," a platform that facilitates access to commercial and on-premise LLMs with budget and access controls. AI-VERDE allows instructors to select the LLM provider, set usage budget for each student and the course, and utilize AI-VERDE's intuitive chat interface or assigned API keys to perform analyses or build applications. During the fall 2024 semester, we are piloting access to OpenAI through AI-VERDE for courses and specialized topic workshops. AI-VERDE also offers the ability to create customized and access-controlled LLM-

powered chat interfaces for private documents. We are currently conducting pilot programs with various groups for the fall 2024 semester to explore these novel capabilities. Look forward to the updates from these pilots in our October newsletter, The Data Drip. If you would like to participate in a pilot, please [email the Data Science Institute](#).

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## U of A DataLab - using AI tools and platforms in research

Applying Machine Learning (ML) and Artificial Intelligence (AI) based methods to research projects can be challenging, but it does not have to be! The fall 2024 series of sessions in the U of A DataLab have short format training that covers some of the tools and platforms such as Hugging Face, PyTorch, Colab and Jupyter and how to use them on your own machine, campus resources, and no-cost NSF ACCESS systems. These standalone sessions in the series allow you to attend the session that is most applicable to your work, whether you are working spatial data, genomics, text or audio, there is a session for you. We have also included sessions on practical skills for managing project tasks and team productivity that will help with your next proposal or existing projects. Learn more about each of the [45 sessions](#). If your department would like to participate in Data Lab, please [email the Data Science Institute](#).

The [Data Science Institute](#) and our campus partners offer workshop sessions through the [U of A DataLab](#). **Register for the Series and attend all the sessions that interest you!**

The DSI Fall 2024 workshop sessions meet at Weaver Science-Engineering Library, Rm 212 and on Zoom. Contact the instructors for more info and details about each series of workshops.

- Tues, 2-3 PM, Series: [NextGen Geospatial: AI & Cloud tools for Geographic Analysis](#) ([Jeff Gillan](#) - [Register](#))
- Tues, 3-4 PM, Series: [Bioinformatics & Genomics: From Data Analysis to AI Applications](#) ( [Michele Cosi](#) and [Carlos Lizárraga](#) - [Register](#))
- Weds, 1-2:30 PM Series: [Understanding Before Doing in the Age of AI](#) ([Rudy Salcido](#), Zoom)
- Thurs, 1-2 PM, Series: [Advanced AI for Healthcare: A Transformative Force](#) ([Greg Chism](#), College of Information Science, [Register](#) for Zoom link)

- Thurs, 2-3 PM, Series: [Exploring the LLM Frontier: From Hugging Face to RAG and Beyond](#) ([Carlos Lizarraga](#) and [Enrique Noriega Atala](#) - [Register](#))
- Thurs, 3-4 PM, Series: [Natural Language Processing for All](#) ([Megh Krishnaswamy](#) - [Register](#))

ARIZONA DATA LAB



## Highlights of AI Empowerment track at the IT Summit

DSI, ICDI, and CyVerse joined over 600 attendees at the two-day 12th annual University of Arizona 2024 IT Summit which provided opportunities to network and explore the latest advancements in technology. Watch the AI Empowerment tracks of the [August 6th recordings](#) in-person sessions and the [August 7th recordings](#) of the virtual sessions.

[Read the article about each presentation.](#)



## Yes, we welcomed new Graduate/Professional students!

Many, many, many students visited the DSI and CyVerse tables at the 2024 Graduate and Professional New Student Orientation Resource Fair on Aug. 21 in Bear Down Gym. In addition to walking away with useful swag, they learned about the [Arizona Data Lab](#) series of workshops, how to

[register for FOSS](#), how to [get involved](#) with computational and data science networking opportunities, and much more.

## NEWS & ACTIVITIES



Take time to get caught up to what you missed over the summer. Review the [Data Science Institute news](#) and news from across campus.



### Join CyVerse and learn about FOSS

Foundational Open Science Skills (FOSS) workshops focus on introducing a host of software tools to help manage data and make science open, reproducible, and scalable. See the [schedule of lessons and content](#) covered throughout the FOSS workshops.



### Announcing the Roots for Resilience Fall 2024 cohort!

The [Arizona Institute for Resilience](#), the [Data Science Institute](#), and [CyVerse](#), are pleased to announce the Fall 2024 cohort for the [Roots for Resilience program](#):



**William Brasic**, Economics  
**Caleigh Curley**, Community, Environment & Policy (MEZCOPH Phoenix)  
**Alyssa Fink**, Architecture & Institute for Energy Solutions  
**A. Brielle Hadley**, College of Law  
**Ulises Hernandez**, Ecology & Evolutionary Biology  
**Joy Kinko Luzingu**, Epidemiology and Biostatistics  
**Edwin Alvarado Mena**, School of Government and Public Policy  
**Imran Hossain Mithu**, Community, Environment & Policy  
**Ekene Chosen Obih**, School of Plant Sciences  
**Sudan Pandey**, Civil & Architectural Engineering/Mechanics  
**Sunday Oluwadamilola Usman**, Systems & Industrial Engineering  
**Cassidy Miles Egan Soloff**, Hydrology and Atmospheric Sciences  
**Andrew Wheeler**, Genetics GIDP

The Roots for Resilience program trains select graduate students from various University of Arizona departments in the use of open science and computational infrastructure tools to apply data science tools to their dissertation's research and discovery and to increase their department's data science capacity. Each member will conclude the program with a department presentation that will be **posted** and available in support of open science.

**ROOTS FOR RESILIENCE**



### **Introducing the 2024-2025 Data Science Ambassadors**

The **Data Science Institute** is pleased to announce a new cohort of data science ambassadors at the University of Arizona.

**Mary Ahern**, College of Agriculture, Life & Environmental Sciences

**Annalise Hummel**, College of Architecture, Planning, and Landscape Architecture

**Depsana Shahei**, College of Information Science

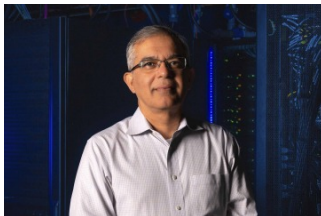
**Lee Taylor-Vaughan**, College of Nursing

**Yuwei Wang**, College of Humanities

The **Data Science Ambassadors** (DSA) in your college is a resource who can help researchers and educators with:

- Data science related questions through consults, training, and/or referrals to the right resource and experts on-campus or online.
- Developing training or other data literacy programs that are specific to the needs of your discipline/college.

The next [call for nominations](#) opens on March 1, 2025. Please reach out to DSA program directors if your college would like to get involved. [Read more about the 2024-2025 ambassadors.](#)



### Human intervention still needed when integrating AI into research

In her article, [Integrating AI into research may revolutionize outcomes](#), Kathy Kudravi with UAHS writes that many health professionals and the director of the [Data Science Institute](#), Nirav Merchant, recognize that AI in research can be revolutionary, but there are limitations.



### CyVerse supporting two NSF Synthesis Centers in AI and Data Sovereignty

In May 2024, CyVerse staff members joined over 150 researchers from across the country at the three-day ESIIIL event in Boulder, CO to promote best practices for ethical, open science focusing on data sovereignty and responsible use of AI. [Read more in the ESIIIL article.](#)



**We have a winner - Posit 2024 Table Contest!**



**Greg Chism** with the College of Information Science at the University of Arizona submitted and won The Best Single Table Example/Tutorial in the 2024 Posit Table Contest. The winning table in the contest, **Waiting for Water, Arizona Indigenous Tribal Water Rights...or a Lack Thereof**, includes maps and animations.



### RSEs don't miss out - register soon for US-RSE conference

The 2024 US-RSE conference theme is Yesterday, Today, Tomorrow: A celebration of all that RSEs have done for computing in the past, in the present, and in the future. **Register to attend** October 15-17 in Albuquerque, NM.

### Share The Data Drip!

Share The Data Drip with your friends and colleagues who can subscribe by **completing this brief form**. If you have data science news that you want us to share in The Data Drip or on the DSI website, please **email the Data Science Institute**.



## CALENDAR

Review the **DSI calendar of events** page for data science activities and workshops from across campus. Complete the **DSI calendar request form** to have your data science event listed in The Data Drip or on the DSI calendar of events page.

Fall  
Semester

**U of A DataLab Series of workshops**

2024

The U of A DataLab at the University of Arizona, with the [Data Science Institute](#) and the [Institute for Computation & Data-Enabled Insight](#), serves as a vibrant center for fostering interdisciplinary research in AI and the wide field of data science.

Sept 5-Nov 21

Thurs

[\*\*Foundational Open Science Skills Workshop-Fall 2024\*\*](#)

Learn the key principles, practices, and how-tos for doing collaborative open science using cutting-edge, open source cyberinfrastructure and tools, in a collaborative, hands-on setting.

SEP/Fri

6-20

[\*\*CyVerse Webinars\*\*](#)

Join the free, half-hour long webinars on science and technology topics to help with research and teaching, with time for live Q & A with the CyVerse expert presenters.

## Yes, add me to the DSI email list

Did a friend send this email to you? Subscribe and we will add you to the Data Science Institute email list. Or [email the Data Science Institute](#) so we can be of assistance to you and your research.

SUBSCRIBE TO THE DATA DRIP

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### [\*\*Land Acknowledgment\*\*](#)

*We respectfully acknowledge the University of Arizona is on the land and territories of Indigenous*

*peoples. Today, Arizona is home to 22 federally recognized tribes, with Tucson being home to the O'odham and the Yaqui. Committed to diversity and inclusion, the University strives to build sustainable relationships with sovereign Native Nations and Indigenous communities through education offerings, partnerships, and community service.*