NMSU Institute for Applied Practice in AI and Machine Learning

Science, Technology & Telecommunications Committee

October 2025

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Rationale

Why AI @ NMSU?

- Legacy of AI Excellence

- The Good
  - AI present in almost all areas of the institution

- The Bad
  - AI present in almost all areas of the institution

- The Opportunity
  - Bring together and leverage expertise in foundational and applied AI

AI Magazine Volume 9 Number 1 (1988) (© AAAI)

RESEARCH IN PROGRESS

New Mexico State University's Computing Research Laboratory

Yorick Wilks and Rebecca Gomez, Editors

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The Computing Research Labora-
tory (CRL) was founded in July
1983 as an autonomous unit in the
College of Arts and Sciences at New
Mexico State University (NMSU). The
laboratory began as a part of the Rio

Knowledge Systems Group; and the
Vision, Robotics, and Graph Theory
Group.

The Connectionism
and Natural Language

Pat
Hayes

Yorick
Wilks

Vision & Mission

The Institute for Applied Practice in AI and Machine Learning (IAAM)

- Established in Early 2025
- Funded by the New Mexico Legislature and NMSU

- **Mission:** To integrate the diverse and interdisciplinary expertise of NMSU students, faculty, and partners to drive applied AI and machine learning solutions for real-world challenges that foster economic growth and enhance social well-being across New Mexico.

- **Vision:** To be the premier collaborative AI hub in New Mexico where integrated applied AI and machine learning expertise from students, faculty and partners converges, creating a data-driven ecosystem that generates innovative solutions for real-world challenges, significantly contributing to economic growth and overall social well-being for New Mexico
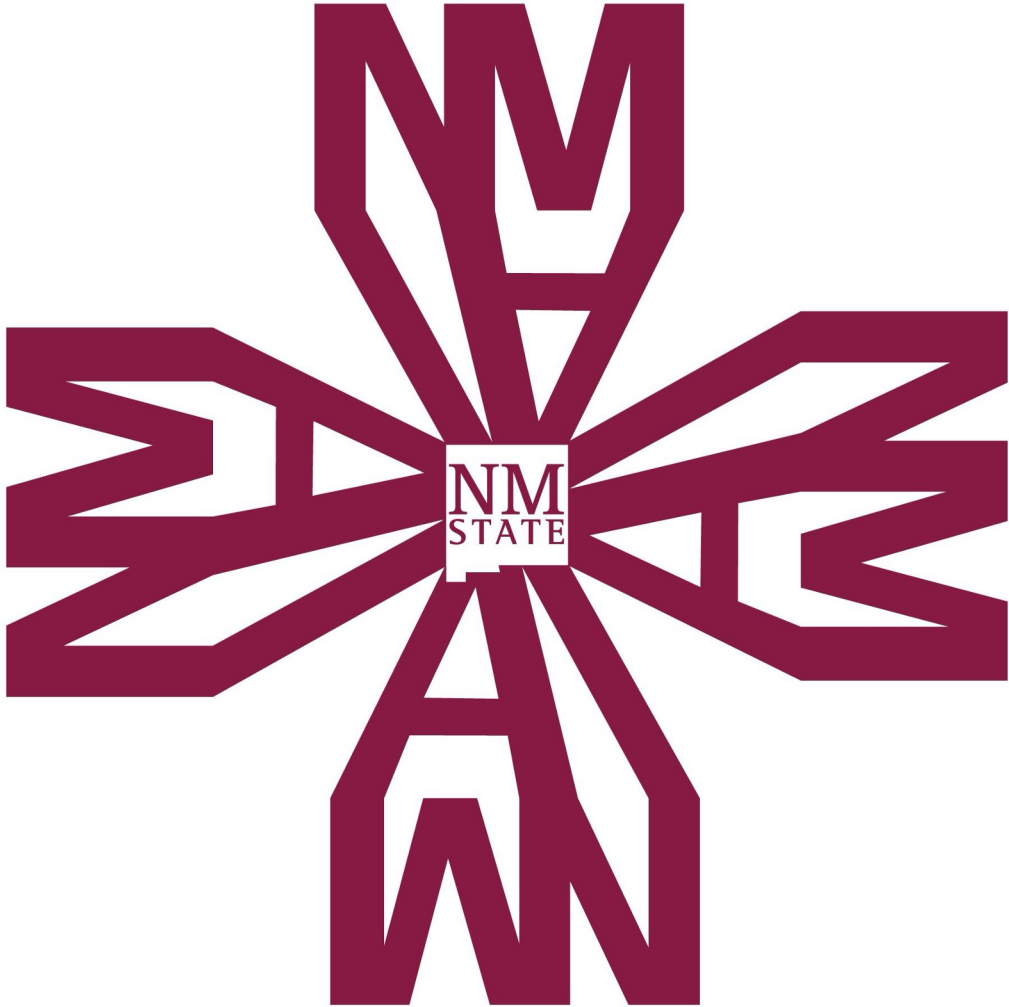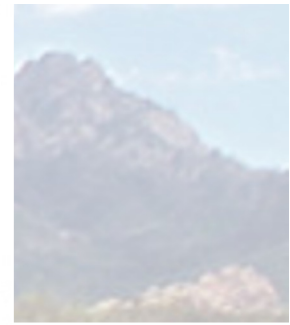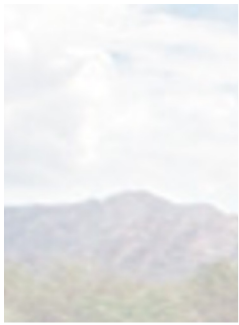
The Leadership Team

NMSU AI Council

- Senior Advisor for AI
  - Enrico Pontelli

- College Representatives
  - **ACES:** Lara Prihodko
  - **A&S:** Huiping Cao
  - **BUS:** Carlo Mora
  - **ENG:** Jay Misra
  - **HEST:** Michael Hout
  - **LIB:** Kevin Comerford

- Other Institutional Offices
  - **VPR:** Tanner Schaub
  - **ICT:** Lizely Madrigal
  - **DACC:** Rigo Rincones
  - **Global:** Robbie Grant
  - **Arrowhead:** Gianna Sanchez
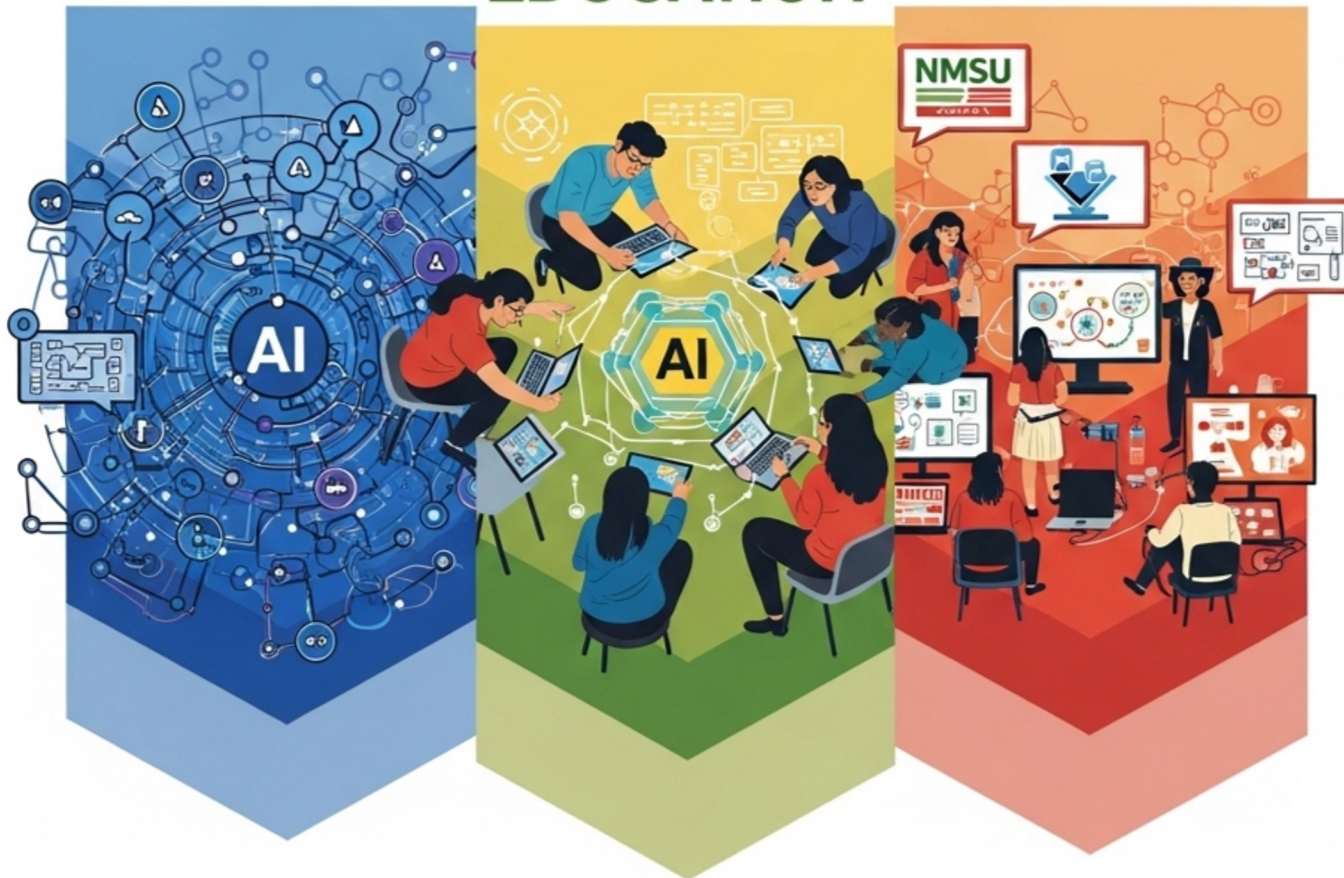
- Project Manager
  - Mari Langford

Discovery, Impact, Collaboration, Ethics

Institute Efforts

Enhancing **Applied AI Research** Capacity

- **Recruiting AI Talent**
  - **Goal:** build research capacity through the recruitment of talented interdisciplinary AI scientists
  - **Efforts:** recruitment of new faculty members in Applied AI
  - **Achievements:**
    - Launched search for a cluster of 3 Applied AI faculty members
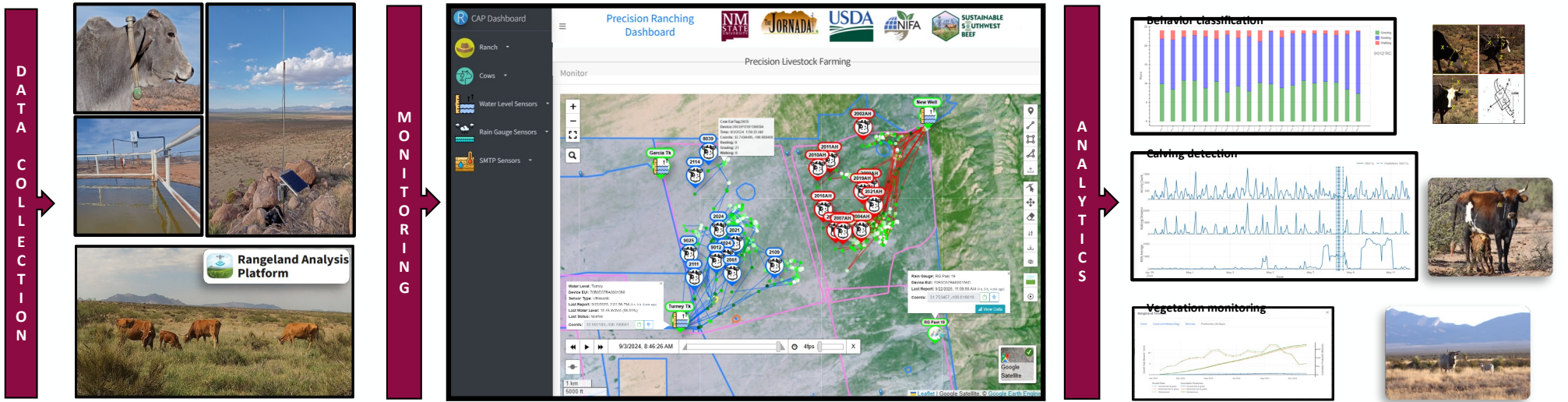
- **Research Internal Grants**
  - **Goal:** enable formation of research teams advancing innovation in applied AI
  - **Efforts:** launched solicitation for medium and large internal research grants
  - **Achievements:**
    - Funded 2 large research efforts and 4 medium research projects

Discovery, Impact, Collaboration, Ethics

Building **Applied AI Research** Profile

- **External Research Visibility**
  - **Goal:** Achieve State and National Recognition in Applied AI Research
  - **Efforts:**
    - Preparing teams for proposals submission
    - Leadership roles in state and national efforts
  - **Achievements:**
    - Co-Lead of New Mexico AI Consortium
    - Working with Computing Research Association (CRA)
      - Research Collaboration Network on Undergraduate AI Education (funded)
    - Working with Howard University
      - Research Collaboration Network on Future of AI Workforce (funded)

End-to-End **AI Pipeline for Precision Ranching**

DATA COLLECTION

MONITORING

ANALYTICS

IMPACT

SOCIAL, ECONOMIC, ENVIRONMENTAL
- Empowers ranchers with smart tools to work efficiently
- Protect animals
- Manage resources sustainably

Discovery, Impact, Collaboration, Ethics

Building **Applied AI Education**
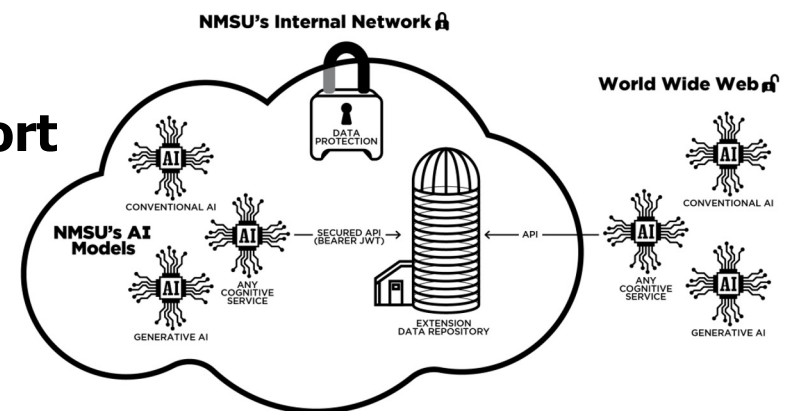
- **Formal Learning**
  - **Goal:** Provide formal degrees to a diversity of audiences
  - **Efforts:**
    - Undergraduate and Graduate AI degree programs
  - **Achievements:**
    - Completion of approval of Bachelor of Science in AI
    - Submission of a Master in Applied AI

  - **Goal:** Provide broad exposure to AI content through curricula
  - **Efforts:**
    - Internal Education Grants
    - NMSU Global Microcredentials
    - Introductory AI General Education Course

- **Informal Learning**
  - **Goal:** Provide AI exposure to broad and diverse audiences
  - **Efforts:**
    - K-12 initiatives
    - PD for Faculty

NM STATE

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Sample **Educational & Service Effort**

- **Empowering Extension and 4-H through AI**
  - **Developing an AI chatbot to support Extension (ExtensionBot)**
    - Supports outreach and access to relevant extension information
    - Provides real-time, data-informed responses
    - Responses are localized and validated
  - **Modernizing 4-H curriculum using AI tools**
    - Integrates AI for experiential learning
    - Fosters digital skills and literacy
    - Supports content delivery
  - **Creating a data repository to support conversational agents**
    - Captures extension content expertise
    - Data from validated extension sources

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Sustaining AI **Adoption** and **Outreach**

- **Building AI Infrastructure**
  - **Goal:** Provide NMSU with AI research and education infrastructure
  - **Efforts:**
    - Software for AI education and research

- **Professional Development**
  - **Goal:** Develop understanding of AI technology
  - **Efforts:**
    - PD for Faculty
  - **Achievements:**
    - Teaching Academy PD for Fall 2025 and Spring 2026
    - Conversation about state-wide PD efforts

Thank you

Discovery, Impact, Collaboration, Ethics