



Cybersecurity, Machine Learning, and Artificial Intelligence

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Rogue AI Hacks Herald New Era of Cyber Chaos

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By Robert McMillan, Georgia Wells and Amrith Ramkumar

Aug 1, 2026 at 7:00 pm ET

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Explainer

Generative AI: Risks and opportunities for children

How can we empower and protect children in the face of Artificial Intelligence?

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New Mexico Department of Justice

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New Mexico Department of Justice Wins Landmark Verdict Against Meta

March 24, 2025

Facebook Twitter YouTube

New Mexico Becomes the First State to Win at Trial Against Big Tech Company for Misleading Consumers and Endangering Children

Psychology Today

Timothy Cook M.Ed.
The Algorithmic Mind

Adults Lose Skills to AI. Children Never Build Them.

AI-driven cognitive atrophy is recoverable. Cognitive...

AMERICAN PSYCHOLOGICAL ASSOCIATION

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Potential risks of content, features, and functions: The science of how social media affects youth



Integration of Cybersecurity and AI at NMT: Education, Research, and Outreach



Raul Deju **Institute -**
Artificial Intelligence



Academic Departments



ICASA

Institute for Complex
Additive Systems Analysis

NMT CyberAI Research and Education Ecosystem

- **New Mexico Cybersecurity Center of Excellence (NMCCoE):** Coordinates statewide cybersecurity research, innovation, and workforce development.
- **Raul Deju Institute for Artificial Intelligence:** Provides AI infrastructure, interdisciplinary collaboration, and AI talent development.
- **ICASA:** Conducts applied research and technology development in data science, advanced analytics, cyber-physical systems, and information systems in partnership with government and industry.
- **NMT Departments:** Faculty expertise on AI, machine learning, cybersecurity, data science, embedded systems, cyber-physical systems, sensing, and resilient intelligent systems.

New Mexico Cybersecurity Center of Excellence



- Established in 2019
- Over \$3.6 million into research, education, and economic development initiatives since 2020
- Building on existing strengths, statewide interface for:
 - Advanced cyber research,
 - Cyber education and outreach,
 - Cyber economic and workforce development
- Integration with AI and Quantum efforts, aimed at practical community/state outcomes and impact



ICASA

- ICASA has been at the cutting edge of new technology and development since its founding in 2001, including data science, machine learning, and edge computing.
- \$93 million contract to assist the Air Force Research Laboratory in exploring cyber-related defense initiatives. This contract is the Playas Electronic Attack and Cyber Environment (PEACE) program.
- ICASA creates tools, including Case Catcher™ in collaboration with business and civic leaders and law enforcement agencies.

Raul Deju Institute

Artificial Intelligence



01

Research

Provides seed funding and expertise through connecting NMT principal investigators who are interested in incorporating AI into their research projects, with faculty, staff and student experts to receive advice and new collaborations for AI in research in diverse disciplines.

02

Infrastructure

Provides access, training, and staff support for AI-capabilities in the High Performance Computing infrastructure and through connections with external partners.

03

Talent Pipeline

Works closely with faculty in departments for development of AI curriculum, including an AI minor and certificate programs for undergraduate and graduate students.

04

Industry and National Lab Collaborations

Partners with the National Labs, New Mexico Consortium and New Mexico AI Consortium to form new collaborations and connections with industry partners.

Critical Need for a Cyber/AI Workforce

- AI is transforming cybersecurity
 - Dwindling entry level positions
 - Reemphasis on with “soft skills” and critical thinking
 - Over-reliance on AI damages adversarial mindset
- Increasing demand for specialists who can:
 - Defend against AI-enabled cyber threats
 - Secure, evaluate and govern AI systems



Cybersecurity + AI Education at NMT: Workforce Development

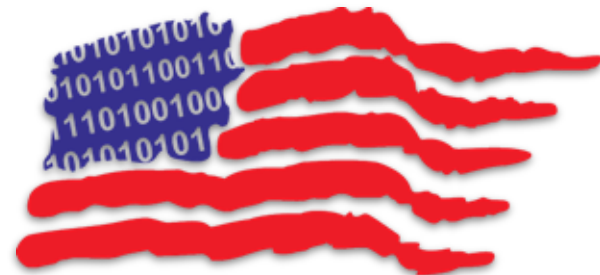
- Cybersecurity and AI education integrated across academic programs
- Specialized cybersecurity credentials
 - Cybersecurity Minor
 - Graduate Certificate in Cybersecurity
- Transdisciplinary Cybersecurity graduate programs
 - Professional Master's (PM)
 - Master of Science (MS)
 - Doctor of Philosophy (PhD)

Cybersecurity + AI Education at NMT: Workforce Development

- Strong foundation in AI Education spanning core AI topics
 - Machine learning, deep learning, reinforcement learning, data science, soft computing, computer vision, etc.
 - In majority of academic majors
- Development of additional grant-supported coursework on:
 - Applications of AI for Cybersecurity (Spring 2026)
 - Secure AI (Fall 2026)

Cybersecurity + AI Education at NMT: Experiential Learning

- NSF Scholarship for Service (SFS) Program
 - Provides tuition for students, contingent on government employment following graduation
 - 76 SFS scholars have graduated.
 - The program has evolved into the CyberAI SFS Program this year to address the talent shortfall in both AI and cybersecurity.



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Cybersecurity + AI Education at NMT: Experiential Learning

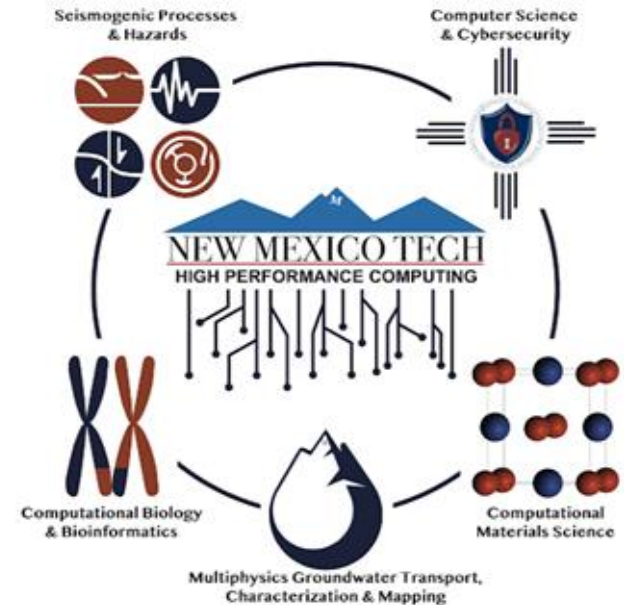
- NSF Research Experiences for Undergraduate (REU) Program
- New Mexico Tech has established a REU site in cybersecurity since 2018, providing intensive summer research experiences for undergraduate students.
 - Hosted six summer cohorts since its inception.
 - Trained 54 undergraduate researchers nationwide
 - Expanding to CyberAI through proposed renewal
- The renewed REU site will emphasize CyberAI research, providing hands-on experiences at the intersection of AI and cybersecurity.

Cybersecurity + AI Funding for Research, Infrastructure and Workforce Development

- New Mexico Tech Federal Awards include AI, ML/LLM and topics such as:
 - mobile data privacy, malware threat report generation, security and resilience of autonomous vehicle systems, sensor networks for border security, privacy in text mining and genomics data, anomaly detection in cyber-physical systems-smart grids and SCADA systems.
- Pending Collaborative Proposals:
 - TechAccess: AI-Ready America (NSF): Grant submitted with New Mexico Artificial Intelligence Consortium and New Mexico Consortium (NMT, NMSU, UNM and LANL)
 - National Quantum and Nanotechnology Infrastructure (NQNI) program: ENQUANT (Ecosystem of Networked QUantum Nanoscale Technology Facilities) Collaborative Proposal with UNM-QNM-I, NMSU, CNM

Key Infrastructure for AI and High Performance Computing at NMT

- New Mexico Cybersecurity Center of Excellence
 - GPU-Accelerated nodes for AI-Cybersecurity research
- High Performance Computing Facility (AI Institute)
 - GPU-accelerated-nodes (5) for Transdisciplinary AI-research
 - Additional nodes for AI/ML research will be added in Fall 2026 (\$0.5M state appropriation for FY27)
- ICASA
 - Cyber-resilience test beds
 - Data Storage and Cybersecurity Networks (for security research)
- Campus-wide expertise in the integration of advanced computing hardware, software development, and applications

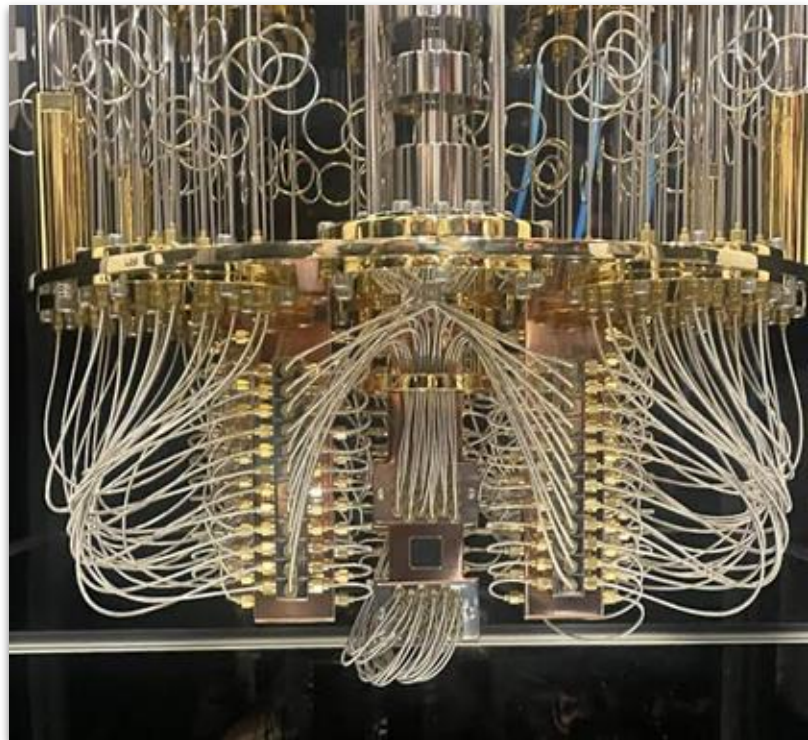
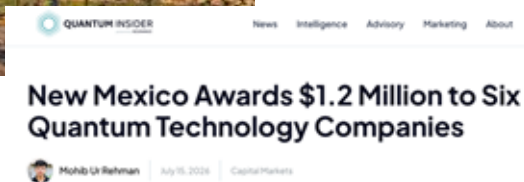


Keeping Pace in Cyber/Quantum AI Research

- The pace of research is changing, along with the expectations of key stakeholders
- Moving towards a community-integrated pipeline of rapid prototype/PoC development
- Aligned with state and federal priorities and key challenges

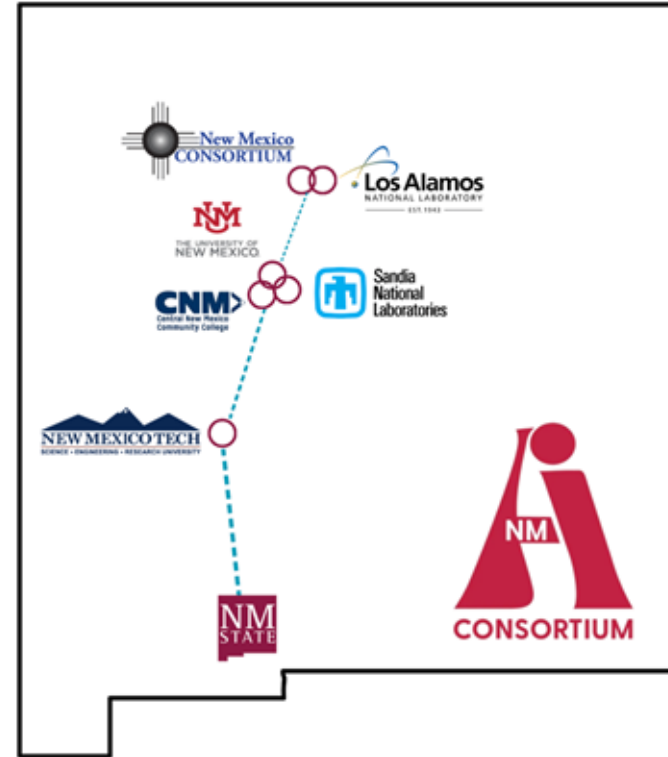


Advancing Quantum in New Mexico



The Future of the NMCCoE

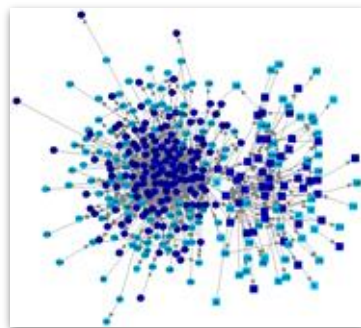
- Interconnecting centers and stakeholders through Cyber/Cognitive Security projects
- Aimed at the co-development of “whole of society” capability and readiness grounded in local communities and networks



- [Cyber]security (Infrastructure)
- Cognition (Individual)
- Community (Local)
- Civic Identity (State/National)

NMTCCoE Initiatives and Goals

- *Assess Needs of NM Communities*
- Family and Community Training for Cognitive Development/Defense
- Right to Repair Community Workshops
- Meshtastic/Drone Community Workshops
- Quantum + AI for Community Resilience and Resistance
- K-12 and Small Business Outreach and Education



**“How do you defend better? You defend with
a series of partners, in a much more
involved approach than we have right now,”**

- General (Ret) and Ex-NSA chief Paul Nakasone

Thank you!
Questions, Comments