Data Informed, Tech Enabled & Future Ready

MAIDAC Building: A multidisciplinary **M**ath, **AI**, **D**ata and **A**nalytics **C**enter

Mission:

The MAIDAC will become the university's hub for innovation and excellence. By integrating data, networking, and computing research it will target grand challenges such as the **future of food, precision healthcare for all, creating a secure cyberspace, autonomy, the future of mining, mineral, and material sciences**, and by enabling transformational tools for scientific discovery, and truly personalized learning.

Project Cost: $46,584,700

O&M: $286,200

Vision

Laboratory will empower student learners and partners with purpose-built intelligence computational know-how and bespoke analytics to:

» Certify career-advancing data skillsets.

» Connect industry with a pipeline of future tech-enabled leaders.

» Accelerate discovery.

» Achieve game changing breakthroughs to outpace competition.

» Fuse interdisciplinary disciplines of math, computer science, statistics, data, artificial intelligence, and analytics.

» Assemble and engage local, statewide, and national cyber communities to deliver insights to solve real-world problems for Utah and its citizens.

» Assist every Aggie to graduate with proficiency as a data master.

Serving Today's 21st Century Learners
Building Features & Amenities for Real-world Impact.

Collaborative Spaces:

» Open-concept work areas for group collaboration and brainstorming

» Flexible meeting rooms and conference centers

State-of-the-Art Technology:

» High-performance computing clusters

» Advanced data visualization labs

» Robotics and automation facilities

» Virtual reality and augmented reality studios

Specialized Research Labs:

» Biometrics and machine learning labs

» Data mining and analytics labs

» Cybersecurity and privacy research labs

» Mathematical modeling and simulation labs

Community Engagement & Outreach

Public Private Partnerships

» Technology enabled and future focused experiential learning opportunities with companies and industries for real-work application.

Public Lectures and Workshops

» Events to educate the public about the importance of math, AI, and data analytics.

» Workshops for K-12 teachers and students.

Community Partnerships

» Collaborations with local businesses, schools, and organizations.

» Outreach programs to underserved communities.

Data Science Incubator:

» A space for startups and entrepreneurs to develop data-driven products and services

Footprint
Reconfiguration & Functionality to Accommodate Dynamic Growth

Students use AI, Data & Technology for Personalized Learning

1. Adaptive Learning Platforms: Virtual tutoring and other platforms use AI to tailor educational content to individual students' learning styles, paces, and strengths.

2. Productivity and Time Management: Virtual assistants like Siri, Google Assistant, and Alexa can help students manage schedules, set reminders, and complete tasks more efficiently, as well as helpful AI-powered note-taking apps.

3. Research and Writing: AI Writing Assistants and Citation and Referencing Tools: AI-powered tools to help generate citations and bibliographies, saving students time and effort.

4. Language Learning: AI to personalize lessons, provide instant feedback, and simulate real-world conversations.

5. Creativity and Design: Tools like Canva and Adobe Photoshop use AI to suggest design elements, color palettes, and layouts.

6. Entertainment and Gaming: AI enabled games to create challenging opponents and dynamic gameplay experiences.

7. Accessibility & AI-Powered Accessibility Tools: For students with disabilities, AI can assist with tasks such as reading text aloud, translating languages, and providing captions. As AI technology continues to advance, students can expect to see even more innovative and helpful applications in their daily lives.

Space Utilization
Research, Education & Applied Learning Opportunities

Industry/Economic Demand:

Healthcare and Biomedical Research

» Predictive analytics for disease outbreak

» Personalized medicine

» Medical image analysis

Climate Science and Environmental Research

» Climate modeling and prediction

» Sustainable energy solutions

» Environmental monitoring and conservation

Cybersecurity and National Security

» Cyber threat detection and prevention

» Data privacy and security

National security applications: Social Sciences and Humanities

» Social network analysis

» Cultural heritage preservation

Education and learning analytics:

» Industry and Business Applications

» Supply chain optimization

» Customer relationship management

» Financial technology

Research & Education Initiatives

Interdisciplinary Research Programs

» Joint research projects across math, computer science, statistics, and related fields

» Collaborative research centers and institutes

» Faculty and student exchange programs with international partners

Innovative Curricula

» Undergraduate and graduate degree programs in data science, artificial intelligence, and applied mathematics

» Specialization tracks in areas such as bioinformatics, financial analytics, and climate modeling

» Experiential learning opportunities, including internships, capstone projects, and research assistantships

Industry Partnerships

» Collaborations with tech companies, government agencies, and non-profits

» Industry-funded research projects and student internships

» Technology transfer and commercialization of research findings

A modernized, cost-effective solution

Current space: 100-year-old building, while a cherished part of our campus history, may no longer be serving its original purpose effectively due to **high maintenance costs, inefficient use of space, and safety concerns** from aging infrastructure.

Proposed solution:

1. Modernized/upgraded infrastructure with building addition.

2. Explore adaptive reuse opportunities to meet university's goals and community needs.

Benefits of Revitalization:

» **Cost savings:** Reduced maintenance costs, improved energy efficiency, and extended building lifespan.

» **Enhanced functionality:** A more modern and adaptable space that better meets current needs.

» **Improved safety:** A safer environment for students, faculty, and staff.

» **Preservation of history:** The building's historic character can be preserved while adapting it to contemporary use.

Careful evaluation of layout, structural integrity, utilities, rooms to be repurposed, etc. & Design Considerations:

» **Sustainability:** Prioritize energy-efficient design features, such as natural lighting, ventilation, and renewable energy sources.

» **Accessibility:** Ensure the building is accessible to all individuals, including those with disabilities.

» **Flexibility:** Design the building to be adaptable to future needs and changes in technology.

» Aesthetics: Create a visually appealing and inspiring environment that reflects the university's identity and values.

UtahStateUniversity