



Advanced Manufacturing Center of Excellence

University Center

Metropolitan State University of Denver

Center Director

Mark Yoss

Principal Investigator

Devi Kalla

Center Location

Advanced Manufacturing Sciences
Institute, Denver, Colorado

Center Since 2023

Center Activities

Work force assistance
Development of AI research
Making connections between industry
and higher education

Assessment Technique

Case studies
Industry partner interviews
Feedback at regional workshops

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MSU Denver University Center

The Advanced Manufacturing Sciences Institute (AMSI) at Metropolitan State University of Denver (MSU Denver) hosts the University Center. MSU Denver is host to a new Industry 4.0 Center of Excellence at Auraria that aims to help manufacturers successfully implement digital transformation technologies resulting in streamlined operations, improved product affordability, and increased competitiveness. The focus of the Auraria Campus Advanced Manufacturing University Center program is to conduct research and offer technical assistance through applied research and partnership to all parts of the state including underserved areas around the existing campus. This University Center helps manufacturing industries to develop new products, or create new and better manufacturing processes, on a fee-for-service basis, using Artificial Intelligence (AI) and Machine Learning (ML) technologies.

Activities

1. MSU Denver will collaborate with manufacturing partners to identify regional training and curriculum needs in AI/ML technologies, identify gaps in existing training content, and develop additional content to meet employer needs.
2. Develop new AI models with intrinsic interpretability and increased adaptability to support Advanced Manufacturing.

3. Based on the review, current research gaps and future research directions will be identified in additive manufacturing industries. The Center will organize a series of workshops led by industry experts to deliver the training curriculum developed by MSU Denver. The Center will also build community and professional development among the cohort through workshops and academic experiences.

4. MSU Denver will implement predictive maintenance systems that utilize AI algorithms to forecast machinery failures, allowing manufacturers to schedule maintenance activities proactively, minimize downtime, and optimize operational costs.

Success

Connecting manufacturing partners and higher educational institutes to accelerate research and regional business expansion. The University Center acts as a connector between the University and industry partners by providing access to an abundance of resources including faculty expertise, research centers, state-of-the-art facilities, and student talent.

Network Anchor Partners

- Metropolitan State University of Denver
- University of Colorado Denver
- Colorado School of Mines
- Big Metal Additive
- Reata Engineering & Machine Works